

OCTOBER – NOVEMBER 2017

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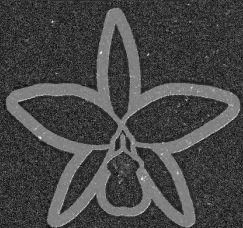
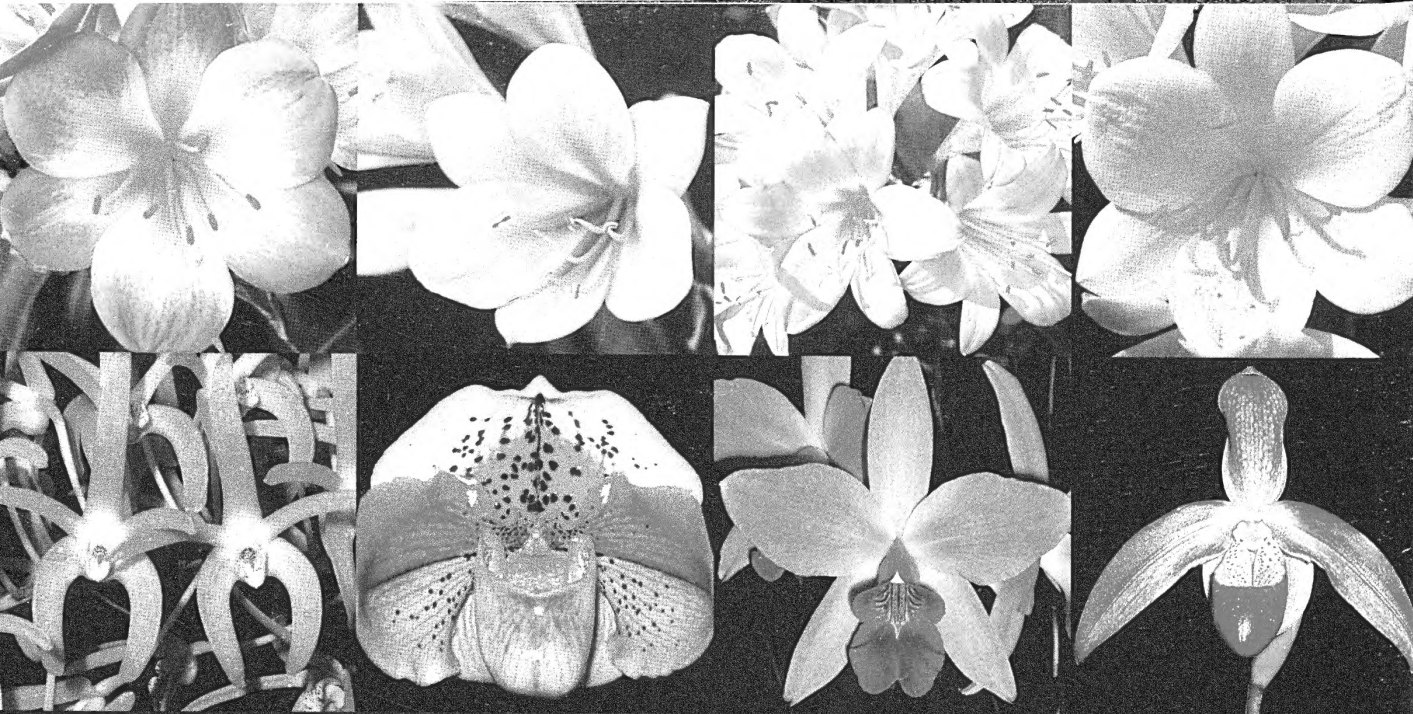
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From the Editor's Desk

In this issue we have two major reports on significant orchid events recently held on either side of the continent. In August 2017 the Western Australian Orchid Spectacular & Conference 2017 was organised by the Western Australian Regional Orchid Organisation and hosted by the Wanneroo/Joondalup Orchid Society. They have successfully held similar events in 2005, 2008, plus the Australian Orchid Conference in 2012. Perhaps sometime in the near future they may get the opportunity of hosting a World Orchid Conference, as they would do it for all the right reasons, in a most unique botanical corner of the planet. They also have a huge team of experienced helpers as well as State Government promotional and financial support. Tony Watkinson gives us an illustrated report on this show.

It was also pleasing to see that a new orchid (a seedling *Cymbidium* hybrid) won the top prize at the above event. I must say it does get boring at some annual orchid shows that bring out the exact same plants year after year. There should be more "first flowering" classes to encourage the growing of new hybrids (and support true orchid hybridists), unlike the production line of pot plant mericlones that is fast becoming the norm. *Cymbidium* Lemon Sorbet 'Dancer' was judged Grand Champion orchid and the Champion *Cymbidium*, plus the Best Seedling in the show. It was exhibited and grown by Kevin Butler of Ezi-Gro Orchids, who has done an enormous amount of work promoting orchids in Western Australia over several decades. Kevin tells us more about this new cultivar in this issue.

The Orchid Societies Council of Victoria (OSCOV) judged the 2016 Victorian Orchids of the Year (VOOTY) earlier this year. Each orchid awarded by the OSCOV Judging Panel during the year is automatically entered in the VOOTY finals, and growers may submit additional entries for consideration. In 2016 the OSCOV judges granted 78 awards, 18 more than in 2015. Each VOOTY category winner receives a framed picture of their winner, including a plaque and medallion. The pictures are presented at the annual OSCOV dinner which is held in conjunction with the OSCOV Show in August. The energetic and enthusiastic Michael Coker, as the President of OSCOV, has written this report published here. I must say the Victorians of OSCOV do the prestige, recognition and promotion of significant awards better than the other states and even the national body. Many orchid administrators could learn a lot from the very successful OSCOV model.

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David Banks
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Volume 82 – No. 5

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Cover Shot

Plumatichilos barbatus
from Western Australia
was previously known
as *Pterostylis barbata*.
Five new species in this
genus are described in
this issue.

Photo: © Chris French.

Western Australian Orchid Spectacular & Conference 2017

Text and photos by Tony Watkinson

Well, what a wonderful August weekend we had at the WA Orchid Spectacular & Conference 2017, which was organised by the Western Australian Regional Orchid Organisation and hosted by the Wanneroo/Joondalup Orchid Society. Many of us are still getting over the efforts that members put in to make the event the great success that it turned out to be. I must admit we have learned so much from our previous efforts in 2005, 2008, the Australian Orchid Conference in 2012 and we are now getting things right every time. The exhaustion levels can still be quite challenging particularly as we are not getting much younger these days. But we sleep well!

Our venue, the Rendezvous Hotel on Scarborough Beach was chosen for its visual amenity. The theme of "Scarborough Fair" was a no brainer and suggested by a number of helpers. Holding the event in a hotel has lots of advantages to visitors as many chose to stay on site for a few days. The Rendezvous Hotel did a great trade with its restaurant where the cuisine was exemplary, and if people wanted something a bit less expensive, there were a huge range of eateries just outside the back door facing the beach.

A feature of this event was the organising committee asking various orchid societies/clubs to handle specific areas of responsibility. For instance, the South Eastern Orchid Society took charge of bump in and out, which involved getting each display from the hotel loading dock to the ballroom floor with

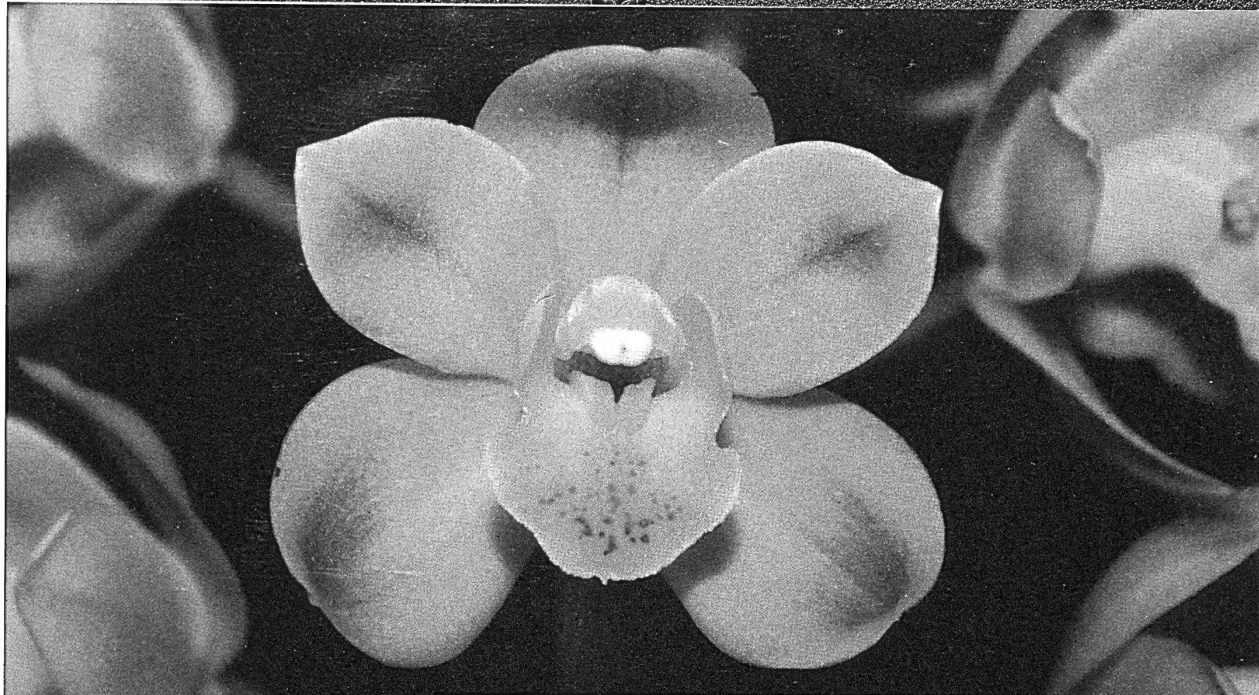
the least disruption to all, rather than having a headlong rush that would only cause conflict. This idea worked well and was used at the other end of the conference to remove the display equipment.

We were fortunate enough to negotiate a half day hire which allowed us to start set up late on the Thursday afternoon. This meant that much of the display equipment was already in place by Friday morning when the real fun started. This part of the event was organised chaos, as is normal, but good humour was to the fore as orchids began invading the hotel foyer and the ballroom. Part of the foyer was also taken over by the orchid judging which was organised by the Wanneroo/Joondalup Orchid Society, with the orchid registration desk in a prominent position and the trestles set up for the judging, which was accomplished by a large group of local, interstate and overseas judges.

In the middle of all this, the first of the Conference Tours departed to see some of WA's largest orchid nurseries, and all went famously according to reports following the tour.

At the same time, all the society helpers were feverishly building their displays which had to be done and finished by 4pm, in plenty of time for the display judging. Once the orchid judging was done, the displays were able to be finalised with a huge variety of quality orchids. The efforts and imagination of members must be commended as the displays showed that much thought and care had gone into them.





Cymbidium
Lemon Sorbet
'Dancer'

The *Paphiopedilum* Study Group display was judged best in the show with an ice cream flavour to the theme "Scarborough Fair" with orchids displayed as ice creams in cones and cups to the delight of many.

And the winners were....

Cymbidium Lemon Sorbet 'Dancer' was judged Grand Champion orchid and, of course, the Champion *Cymbidium*, but also the Best Seedling in the show. A *Cymbidium* with two elegantly cascading inflorescences of yellow/green flower and subtle red markings, owned by Kevin Butler of Ezi-Gro Orchids. Many fine comments were heard during the next two day confirming the judge's choice.



Cymbidium
Lemon Sorbet
'Dancer'
(Grand Champion)

Australian Orchid Review

SUBSCRIPTION RENEWAL NOTICES

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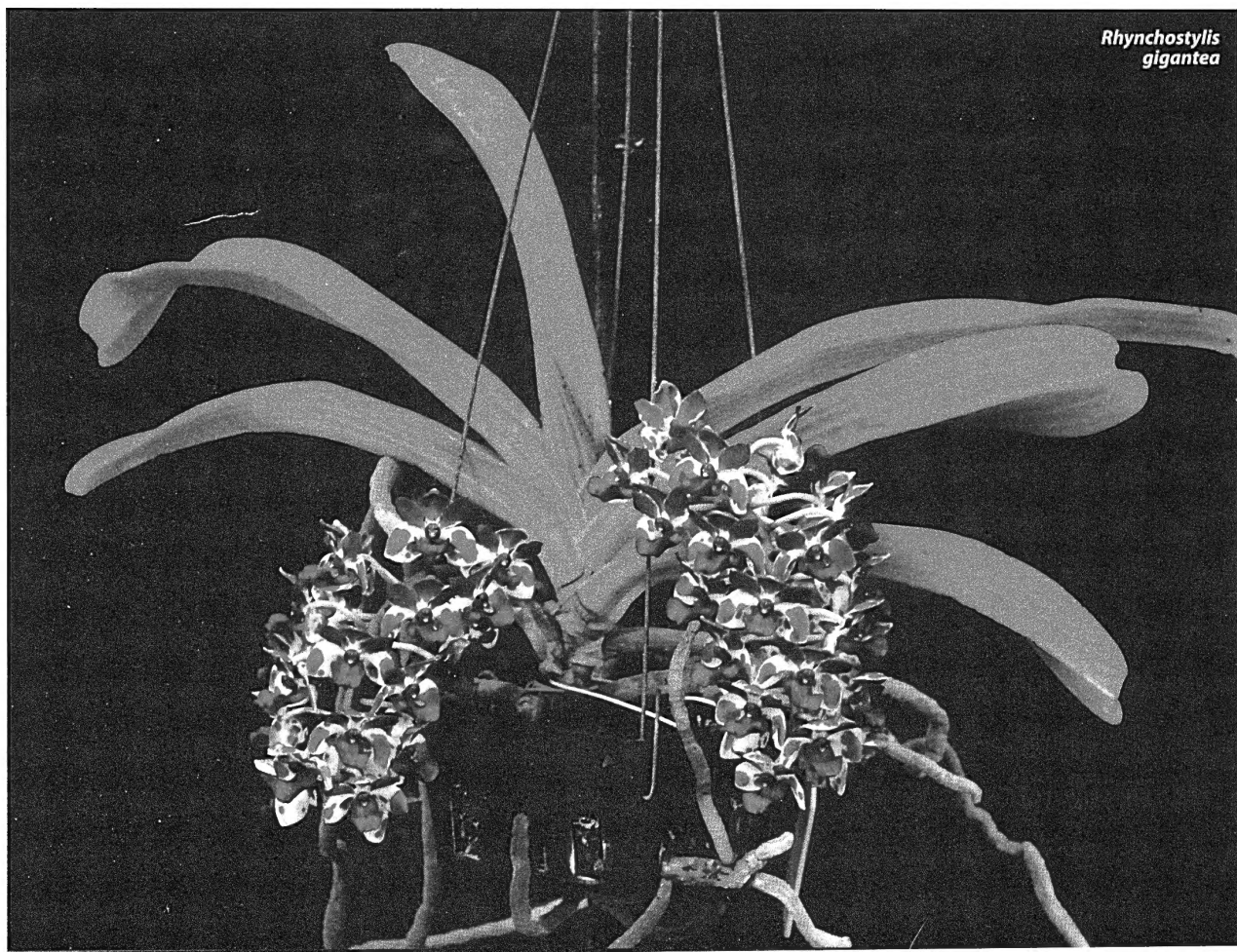
Shannon Smoker, the current president of the South Eastern Orchid Society, was the owner of the Reserve Champion and Champion *Paphiopedilum* with *Paphiopedilum insigne*. It was delightfully displayed with all the six blooms standing to attention and looking at the viewer. Certainly a well deserved win for a well presented orchid.

Champion Vandaceous was a fine *Rhynchostylis gigantea* with two inflorescences of wonderful red and white flowers with the two contrasting colours having an enchanting effect. It is owned by Charly and Gerda Hartmann who were elated with their win.

Dendrobium Pacific Pride (*alexandrae* x *forbesii*) and owned by Rosemary McGrath, a Section *Latouria* cross, was judged the Champion *Dendrobium*.



*Paphiopedilum
insigne*



*Rhynchostylis
gigantea*



**Dendrobium
Pacific Pride**



**Dendrobium
Pacific Pride**

Champion *Phragmipedium* was the bright, vibrant red ***Phragmipedium Inca Fire***, also owned by Ezi-Gro Orchids.

The Conference Chairman, Bruce Larson, was rewarded for all his hard work with a win for his ***Dendrobium Majestic Aussie*** (Aussie Starlight x Aussie Victory) as the Champion Australian Native Orchid. This had two inflorescences of yellow flowers with red markings that showed themselves well.

The Champion *Phalaenopsis* was ***Phalaenopsis hieroglyphica***, a species orchid which, I am pleased to say, is owned by myself and my good lady wife Mavis. This orchid had been in flower for quite some time but still held its flowers well. We are both most pleased!!

A big winner on the day was the novice grower, (but not for much longer) Lynne Bainbridge who had the Champion *Oncidiinae* and Champion *Laeliinae* winners with the *Oncidiinae* "**Unknown**" (almost certainly a *Colmanara Wildcat*) and ***Laeliocattleya Amaroo***.

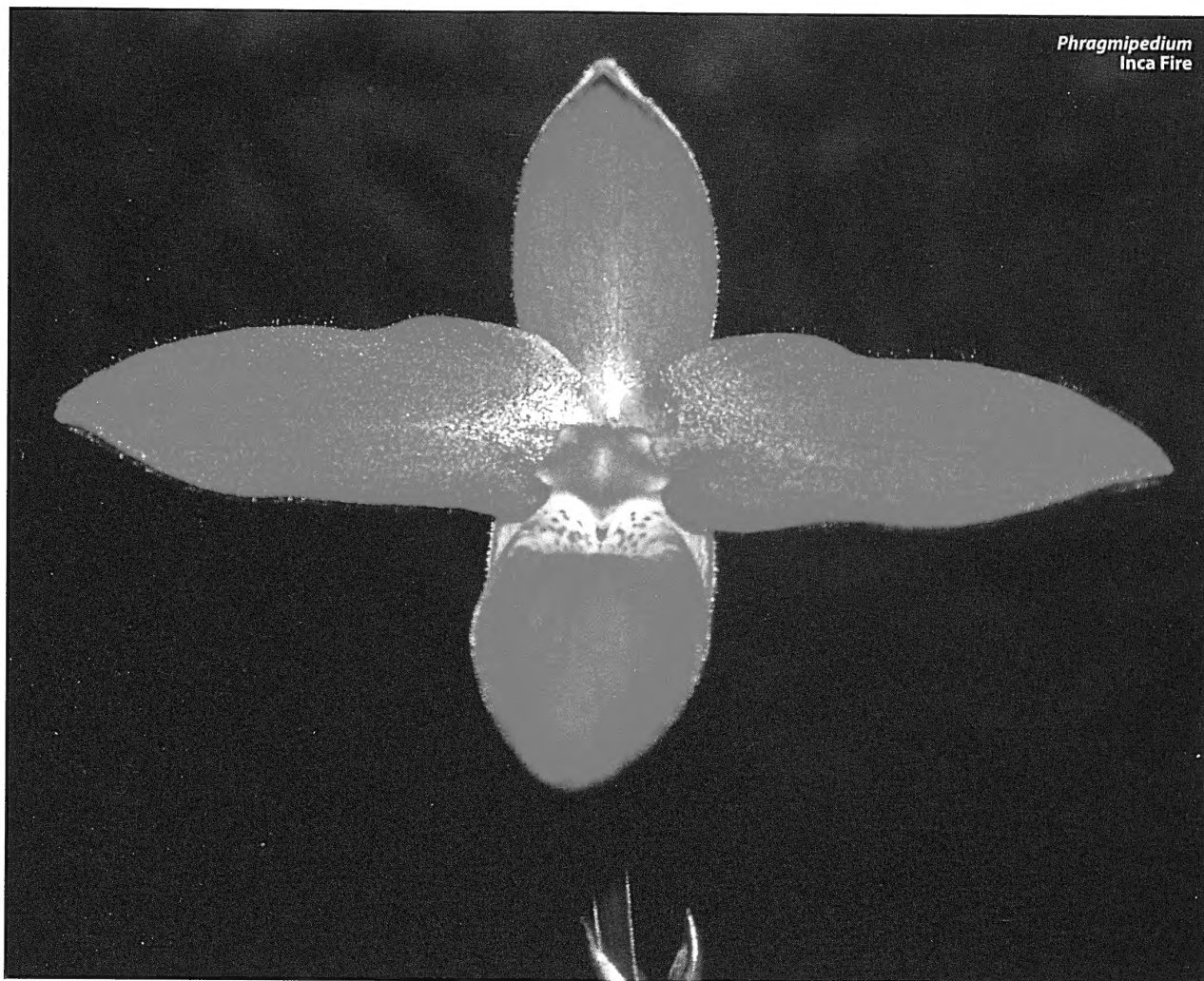
And not to be forgotten... the Champion Miscellaneous and also Best Specimen was the Philippine species ***Dendrochilum wenzelii*** owned by Maxine Godbeer. A huge plant with a multitude of small bright red flowers.

The Opening Ceremony on Friday took place in the hotel lobby where Photographic Competition winners were displayed. The night was graced by the presence of

Professor Kingsley Dixon who had agreed to do us the honour of opening the show. Bruce Larson, the WAOS chairman, first read a letter wishing good luck for the conference from the AOC president Jim Shaughnessy, followed by myself as the president of Wanneroo/Joondalup Orchid Society, the host society for the event, and also the current president of WAROO, to thank members of all the societies who had given up their time to get the WAOS off the ground and to thank our invited guests and registrants. I then introduced Professor Dixon who spoke glowingly about Western Australia and our wonderful native orchids, and, wishing us all success, declared the event open.

Saturday morning dawned bright and clear as the winter weather took a break for the weekend, which was just as well, as the Perth area had been visited by some of the worst winter weather just a few days before. But the weather gods were smiling on us at last.

The WAOS volunteers, garbed in the attractive, official WAOS shirts of black and orange, were manning the entrance and raffle table. This area was run by the Northern Districts Orchid Society as part of the plan to include as many orchid societies as possible in the running of the event. Some great raffle prizes were on offer with donations of wheelbarrows filled with all sorts of orchid related goodies.



A feature of the event were the public workshops with rolling demonstrations and talks every hour, on the hour for the two days of the event and included talks on all the major orchid groups, talks about repotting, deflasking, keeping your Bunning's *Phalaenopsis* alive, etc. These were organised by the Species Orchid Society of WA and proved to be an outstanding success, with many favourable comments from the public.

In keeping with our policy of asking various orchid societies/clubs to handle specific areas of responsibility, the Orchid Society of WA organised the WAROO member societies common sales area which did a roaring trade all weekend in competition with fourteen other vendors from across the world.

The visitors to WAOS 2017 were profuse in welcoming our guest speakers with the lecture room overflowing on some

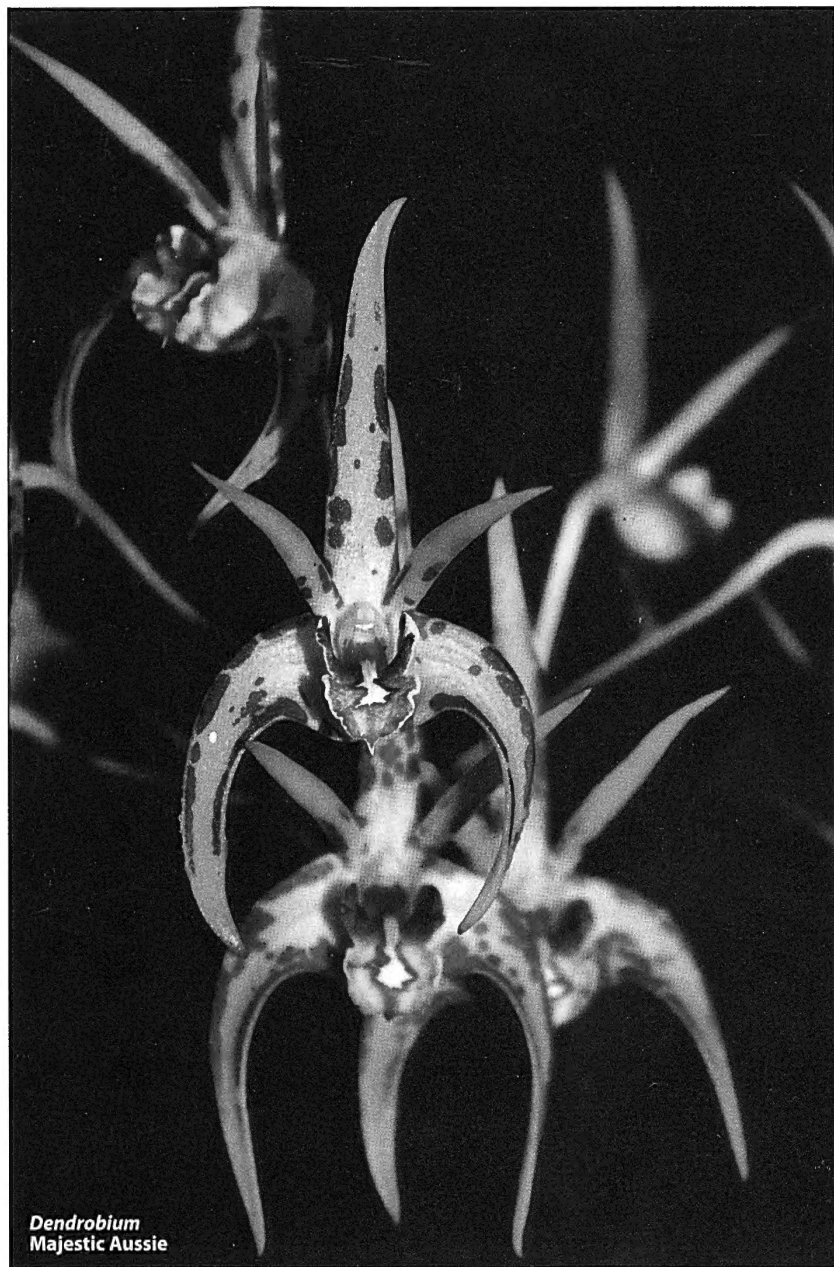
occasions. Bill Thoms opened the lecture program with a full house causing a holdup whilst more chairs were sourced. An hour was allotted for each speaker with most taking up all their time with questions after their talk was done. Indeed some had to be removed after their time was up for the next lecture to start, such was the enthusiasm. Bill was great value as he gave the registrants three lectures and even gave one for the general public in the workshop area.

Both Marni Turkel's talks, on Miniature Orchids and Lesser Known *Oncidiinae* were well attended with many positive comments from attendees afterward. Marni showed us many of the miniature orchids that are so interesting without requiring a lot of room to grow. Many of the photos were from Ron Parsons and of excellent quality. Marni was able to talk passionately about these orchids as they are what she grows. Certainly her enthusiasm for these species helped with her flask sales.

We were extremely grateful that Wenqing Perner was able and willing to fill in for her late husband Holger, who sadly passed away quite suddenly not long before the conference. And fill in she did magnificently, holding her audience enthralled with her well-constructed lectures on *Cypripediums* in China. Wenqing predicts that this is the start of a whole new career for her, and we agree.

We were pleased to have Jenna Wraith with us to explain the impact of tourism on orchid conservation. A well thought out lecture was followed by questions which turned into a round table discussion on the subject.

David Woolf and Ray Clement (of Tinonee Orchid Nursery) rounded out our lecture program with well presented talks as David doubled up with the *Cattleya* Alliance and the *Oncidiinae* Alliance, and Ray ended the lecture program with Australian Epiphytic Orchids. A huge thanks to all our guest speakers who helped to make the conference a success.



Dendrobium
Majestic Aussie

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Laelocattleya
Amaroo



Dendrochilum
wenzelii

Best Specimen Orchid

Champion Miscellaneous



*Caladenia
arenicola*



*Pterostylis
sinuata*
(photo: Chris Jones)



*Caladenia
macrostylis*

The WAOS Dinner, on the Saturday evening, was an occasion for fun, with the prizes being presented to the competition winners. The WAOS Chairman, Bruce Larson made the presentations after a speech congratulating them on their efforts.

There will be a follow up article regarding the WAOS Tours at a later date, but here are some of the orchids that were seen on the 4-day tour. A few flowering plants of the threatened species *Pterostylis sinuata* of which only a handful are known to exist at two sites, and on day 4 at the last stop, two flowering plants of the northern Queen of Sheba, *Thelymitra pulcherrima*. ■

Tony Watkinson
Email: waos@iinet.net.au



*Thelymitra
pulcherrima*
(photo: Manee Poffley)



Cymbidium
Lemon Sorbet
'Dancer'

Cymbidium

Lemon Sorbet 'Dancer'

Text and photos by Kevin Butler

How unusual that something I enjoy eating also turns out to be a top *Cymbidium*! The parentage of this *Cymbidium* hybrid is Tonto's Target and Fifi. The original cross was made by Cal-Orchids in California USA and was registered in 2014, after a plant they flowered with a cultivar name of 'Mother Lode' was awarded in 2013. This flower was an intermediate with 37 flowers on a raceme.

My flower came from a remake by George Hatfield of Hatfield Orchids, also of California. The plant that won Grand Champion of the WA Conference & Show 2017 was a first blooming seedling and most probably will flower with more flowers on the inflorescence as it matures. It was miniature in size with two racemes having 20 and 29 flowers, respectively. The outstanding feature was the consistency amongst the round shaped flowers and the great arrangement

around the stem. The plant was also Grand Champion in the Cymbidium Orchid Club of WA's winter show the week before, where it was granted a HCC of 77 points.

'Dancer' is predominately green and takes more after the *Cymbidium* FiFi 'Harry' parent than the plant awarded in California, which was more yellow. Both plants had a reddish mid-line. *Cymbidium* Tonto's Target is a cross of Tracey Reddaway and Mary Pinchess which goes back to 1960, hence the yellow colour.

It amazes me how much orchids are moved around the world for everyone to share.

Kevin Butler
Ezi-Gro Orchids, WA
Email: ezi-gro@iinet.net.au

Cymbidium
Lemon Sorbet
Dancer



Grand F. Thompson Crystal

Crystal of the Year



Western Area



Victorian Orchids of the Year 2016

by Michael Coker

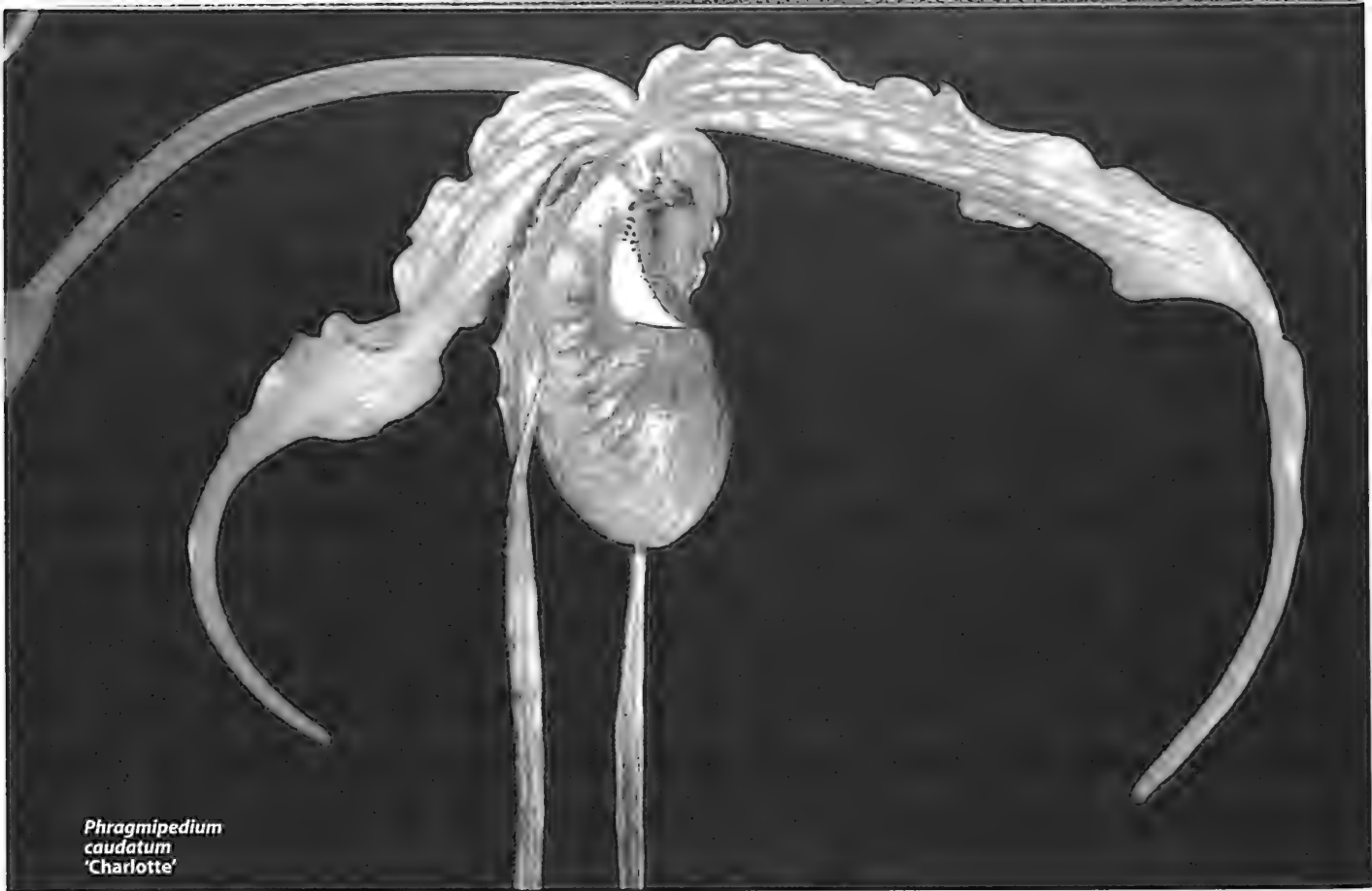
The Orchid Societies Council of Victoria (**OSCOV**) judged the 2016 Victorian Orchids of the Year (**VOOTY**) earlier this year. Each orchid awarded by the OSCOV Judging Panel during the year is automatically entered in the VOOTY finals, and growers may submit additional entries for consideration.

In 2016 the OSCOV judges granted 78 awards, 18 more than in 2015. There were 55 quality awards, 16 awards for outstanding culture, 4 awards of distinction, 2 certificates of botanical merit and 1 'Award of Quality' (requiring 5 superior orchids from one seed pod, with at least 1 of those receiving a quality award).

The VOOTY are awarded from photographs, because obviously not all plants can be considered by the OSCOV judges at the same time. The OSCOV Registrar Glenda Coutts presides at the VOOTY panel meeting, and the photograph

presentation is prepared by the OSCOV Awards Secretary Marilyn Larkin.

The quality of the 2016 finalists was again exceptional, and the category winners were outstanding. The **Victorian Orchid of the Year** (as well as the **Memoria Gunter Haar Award for Best Cultured Orchid of the Year**, **Victorian Best Cultured Species Orchid of the Year** and the **Gerald McCraith Award for Victorian Species Orchid of the Year**) was won by Dieter Weise for his magnificent flowering of *Phragmipedium caudatum* 'Charlotte'. Interestingly, this same plant also won the 2013 Victorian Orchid of the Year when with 1 stem carrying 3 flowers, it received an AM/OSCOV. In 2016 Dieter managed 4 stems with a total of 13 flowers and it received an FCC/OSCOV. This is only the 4th FCC that OSCOV has awarded since July 1992.



Phragmipedium
caudatum
'Charlotte'



Sarcochilus
cenedra
'Marie'

There were joint winners of the **Victorian Best Cultured Hybrid Orchid of the Year**, with *Sarcochilus* Cenedra 'Marie' (which also won the **Victorian Australian Native Hybrid Orchid of the Year**) grown by Keith Moss, and *Dockrillia* Phil's Delight 'Neerim' grown by Neil & Fay Allison, sharing this category. Neil and Fay had earlier in 2016 won Reserve Champion Orchid at the OSCOV Show with their wonderful specimen Australasian hybrid.

The Champion Orchid of the Show at the 2016 OSCOV Show went on to win VOOTYs as **Memoria Harold and Florence Coker Seedling Orchid of the Year** and **Victorian Paphiopedilum Hybrid Orchid of the Year**. *Paphiopedilum* Winter Friend 'Alexandra' was grown by Michael Coker and it also received an AM/OSCOV.



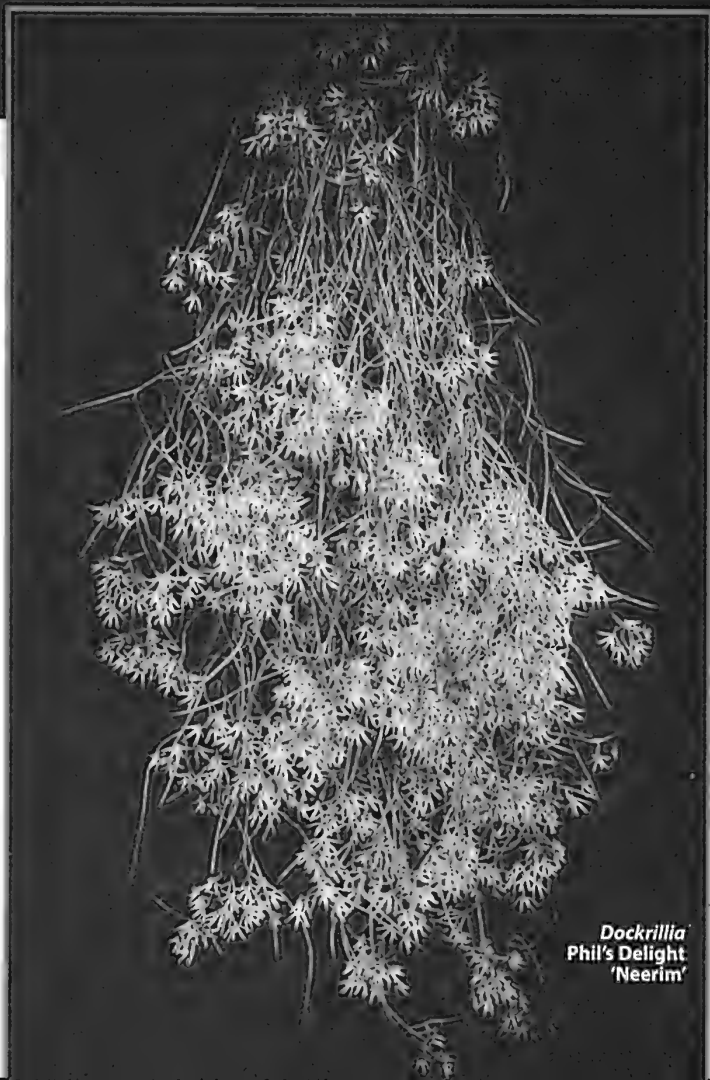
Dendrobium speciosum
'Lemon All Over'



The **Victorian Australian Native Species Orchid of the Year** was won by The Hanging Garden, a nursery in Balnarring specialising in Australian Native orchids, with their wonderful *Dendrobium speciosum* 'Lemon All Over', a cultivar with the very famous 'Daylight Moon' as a parent.

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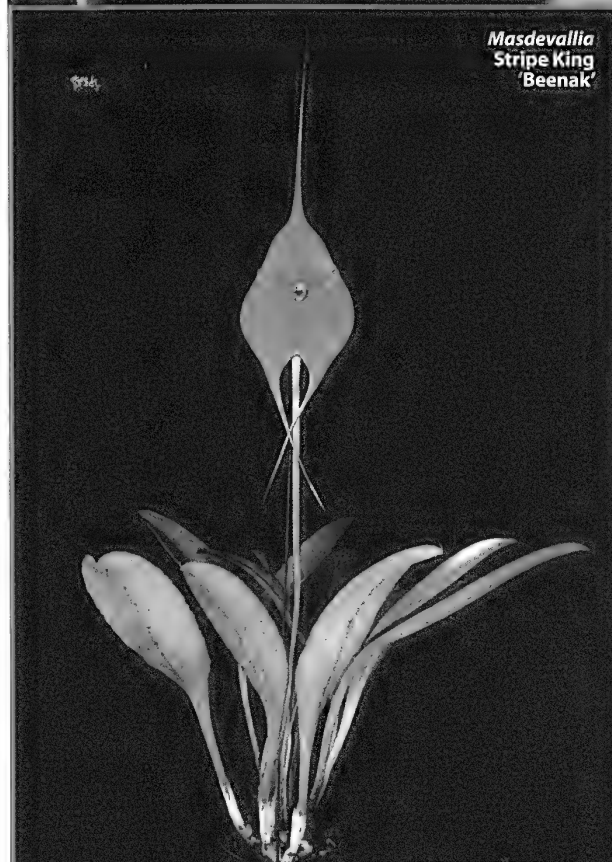
Dockrillia
Phil's Delight
'Neerim'

Paphiopedilum
Winter Friend
'Alexandra'





Cymbidium
Khan Fury
'Nerolie'



Masdevallia
Stripe King
'Beenak'

The **Victorian Cymbidium Hybrid Orchid of the Year** was heavily contested with 13 plants competing for the VOOTY, but David Wain emerged victorious with his plant of *Cymbidium* Khan Fury 'Nerolie'. Victoria is renowned for producing fantastic *Masdevallias*, and our most famous hybridiser of *Masdevallias*, Clive Halls, won the **Victorian Masdevallia Hybrid Orchid of the Year** with an orchid of his own breeding, *Masdevallia* Stripe King 'Beenak'.

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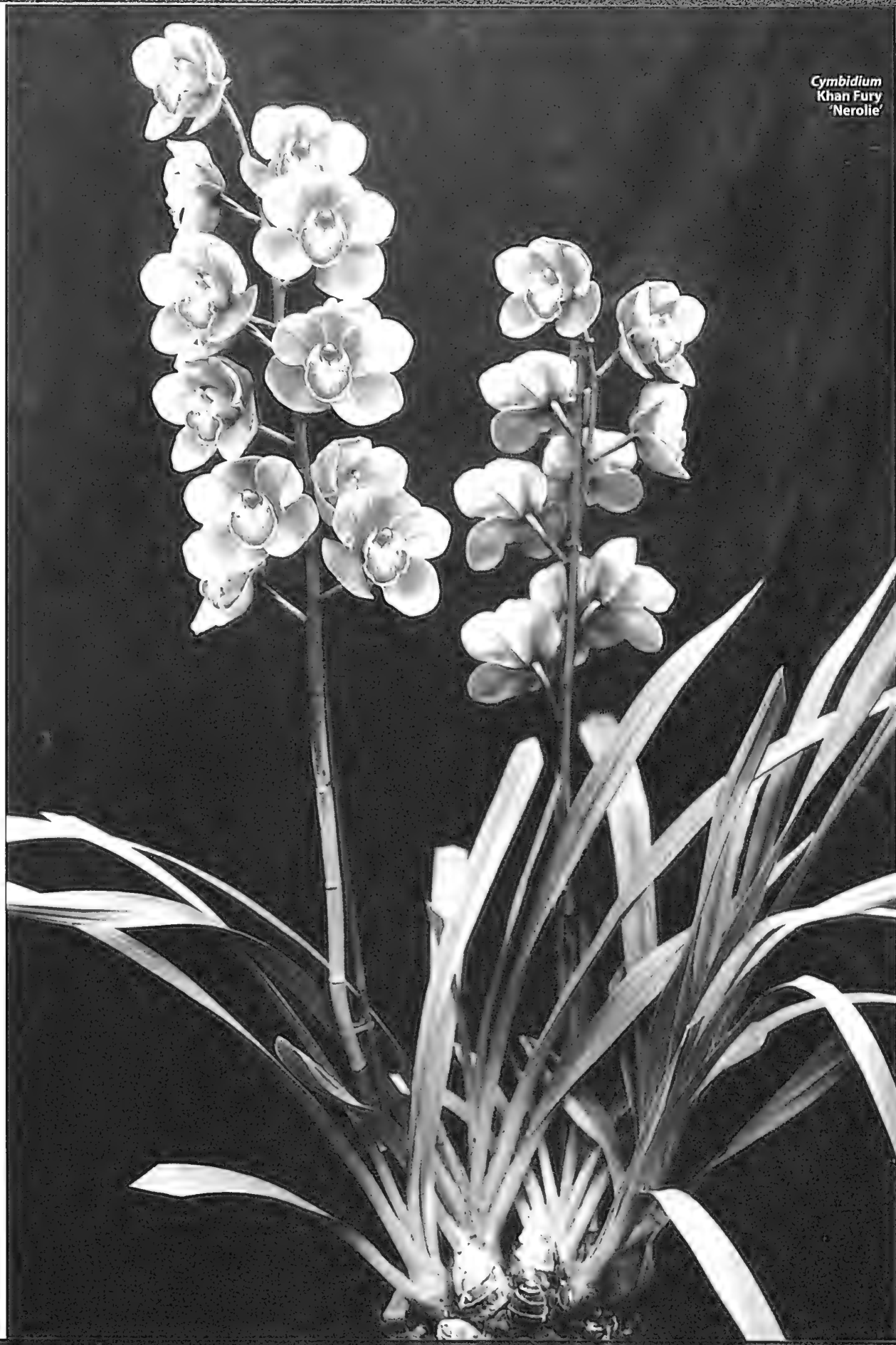
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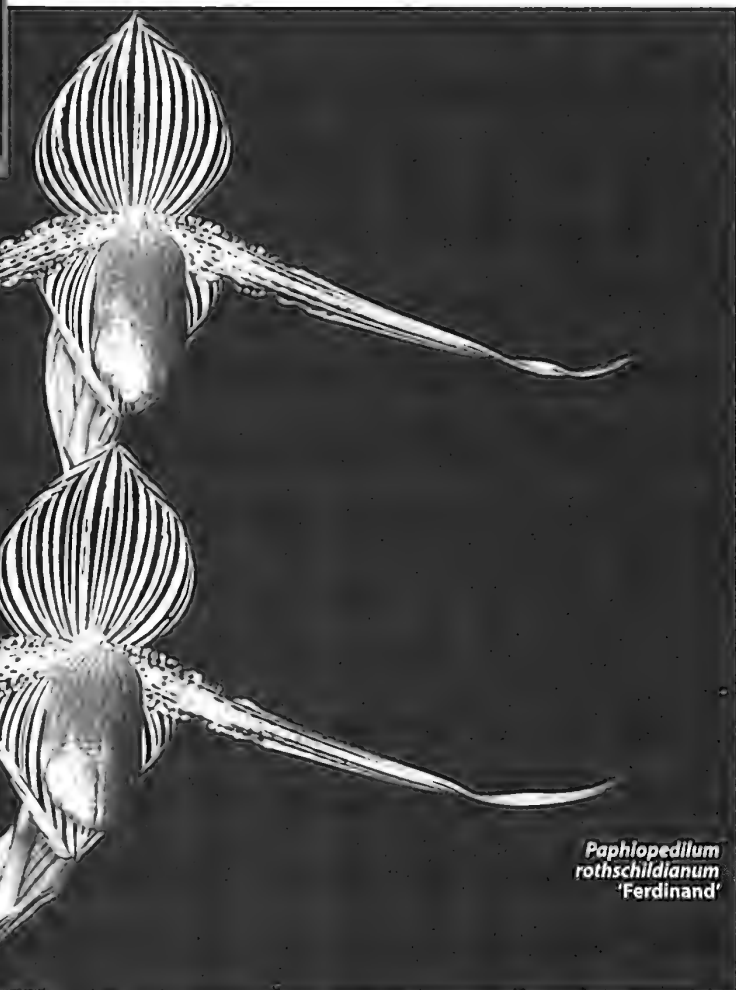
Cymbidium
Khan Fury
'Nerolie'



Oncidium
Murray River
'Astrid'



Oncidium
Murray River
'Astrid'



Paphiopedilum
rothschildianum
'Ferdinand'



Paphiopedilum
rothschildianum
'Ferdinand'



Phragmipedium
Fritz Schomburg
'Maree'

Dieter Weise doesn't limit his growing skills to species orchids, Dieter also grows *Oncidiinae* to perfection, and he also won the **Victorian Oncidiinae Hybrid Orchid of the Year** with *Oncidium* Murray River 'Astrid'. Michael Coker was also a multiple winner in the 2016 VOOTY awards. Michael won the **Victorian Paphiopedilum Species Orchid of the Year** with *Paphiopedilum rothschildianum* 'Ferdinand', named after Mr Rothschild himself, as well as **Victorian any Other Hybrid Orchid of the Year** with another slipper orchid, *Phragmipedium* Fritz Schomburg 'Maree'.



Phragmipedium
Fritz Schomburg
'Maree'

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The **Victorian Laeliinae Hybrid Orchid of the Year** was won by a perennial winner in this category, Castle Creek Orchids, with a plant of *Cattleya* Dal's Magic 'Dondrup'. Andrew & John from Castle Creek Orchids have won this category 5 times previously since 1997 so it was no great surprise that they added a 6th to their collection.

The **Victorian Award of Distinction of the Year** was won by Andy Tran for his plant of *Cymbidium* Canned Magic 'Templestowe', a very unusual spotted *Cymbidium canaliculatum* hybrid.





Cymbidium
Canned Magic
'Templestowe'



Cymbidium
Canned Magic
'Templestowe'



Left:
Framed presentation
photograph, plaque
and medallions for
Phragmipedium caudatum
'Charlotte'

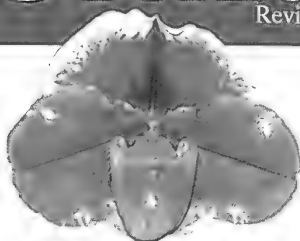
Below:
Master grower
Dieter Weise receiving his
prestigious award for
Phragmipedium caudatum
'Charlotte'
from OSCOV President
Michael Coker





*Dendrobium
Essie Banks*

Australian Orchid Review



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AOR 005

The final VOOTY was the **Victorian Award of Quality of the Year**. An Award of Quality is only given where at least 5 superior seedlings from the one seed pod are flowered, with at least 1 of those receiving a quality award. In 2016 Marita Anderson presented 6 plants of *Dendrobium* Essie Banks, hybridised by her late partner Chris Waterman. This was a fabulous achievement of Marita and showcases the hybridising and growing skills she and Chris contributed to the Victorian orchid scene.

Each VOOTY category winner receives a framed picture of their winner, including a plaque and medallion. The pictures are presented at the annual OSCOV dinner which is held in conjunction with the OSCOV Show in August.

Michael Coker

President, OSCOV

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Five new species of *Plumatichilos* (Orchidaceae: Pterostylidinae) from Western Australia

by David L. Jones and Christopher J. French

Abstract

Plumatichilos longicornis, *Plumatichilos precatorius*, *Plumatichilos saxosus*, *Plumatichilos serotinus*, *Plumatichilos sigmoideus*, five new species with affinities to *Plumatichilos barbatus* (Lindl.) D.L.Szlachetko or *Plumatichilos turfusus* (Endl.) D.L.Szlachetko are described as new from Western Australia.

Key Words

Orchidaceae, *Plumatichilos barbatus*, *Plumatichilos longicornis*, *Plumatichilos precatorius*, *Plumatichilos saxosus*, *Plumatichilos serotinus*, *Plumatichilos sigmoideus*, *Plumatichilos turfusus*, new species, Western Australia, Australian flora.

Introduction

Continuing studies into *Plumatichilos* in Western Australia have revealed new species, five of which are described here as new. This follows the recent description of *Plumatichilos facetus* and *Plumatichilos galgulus* (Jones & French 2017).

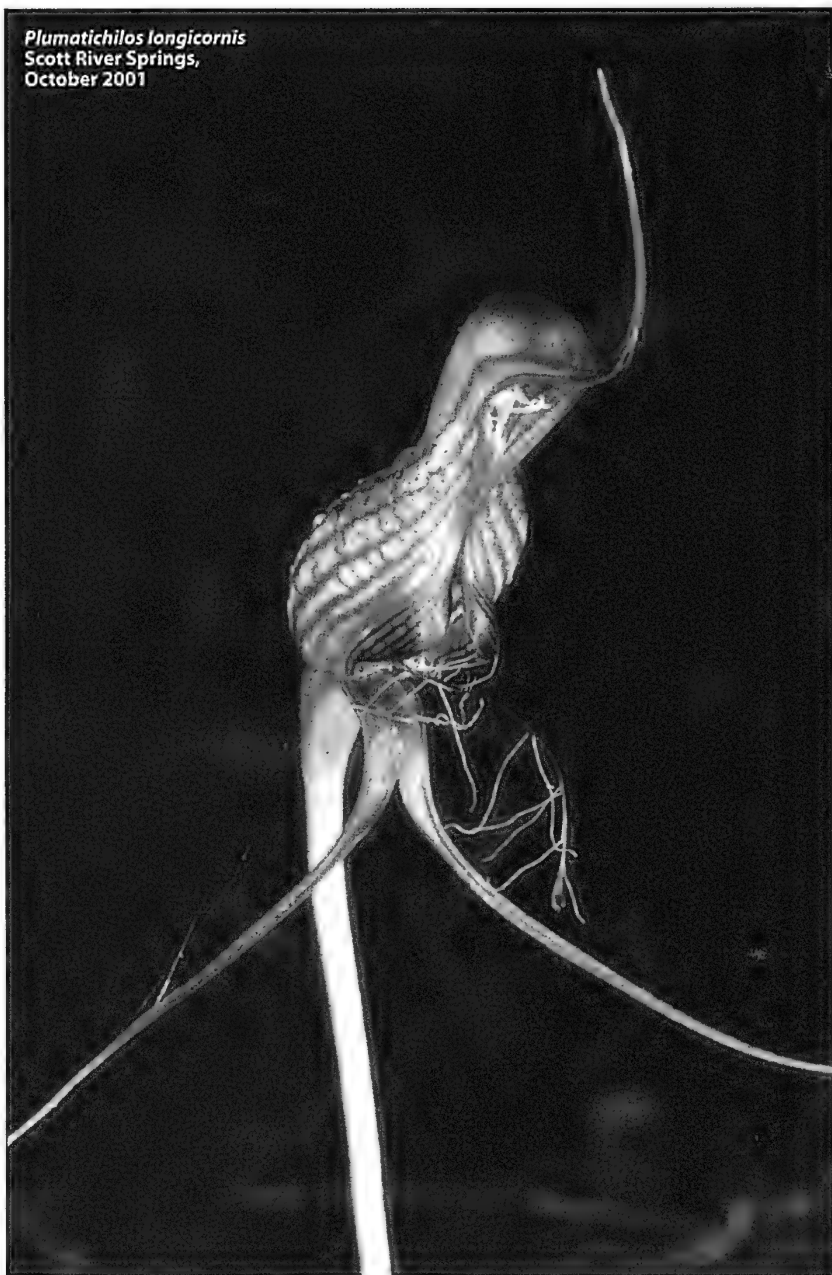
Taxonomy

1. *Plumatichilos longicornis* D.L.Jones & C.J.French, *sp. nov.* With affinity to *Plumatichilos barbatus* (Lindley) Szlachetko but differing by its longer flowers (80-120 mm long in *P. longicornis* cf. 55-65 mm in *P. barbatus*), much longer, thinner apical point on the dorsal sepal (15-25 mm long in *P. longicornis* cf. 8-15 mm in *P. barbatus*), longer, thinner widely divergent free points on the lateral sepals (35-50 mm long in *P. longicornis* cf. 25-35 mm in *P. barbatus*), strongly falcate petals with a vestigial basal lobe and longer labellum (22-30 mm long in *P. longicornis* cf. 18-25 mm in *P. barbatus*) which is more densely hairy.

Type: Western Australia. Darling District: 48.8 km along Muirs Highway from Manjimup towards Mt Barker, 16 Oct. 1988, D.L.Jones 3181A (holo CBG 8806843, iso AD, MEL, NSW, PERTH).

Illustrations: Page 399, Brown, Dixon, French & Brockman (2013), as *Pterostylis* sp. "Muir Highway" – "Muir Highway Bird Orchid".

Plumatichilos longicornis
Scott River Springs,
October 2001





Plumatichilos longicornis
Tonebup Road,
October 1994

Description: *Sterile rosette* with 6-10 (-14) leaves, spreading; petiole 0-7 mm long; lamina narrowly elliptic to ovate, 7-12 mm long, 3-7 mm wide, green, margins entire, apex long-acuminate. *Fertile plants* 25-35 cm tall. *Cauline leaves* 10-20, obliquely erect to erect; basal leaves crowded in an extended rosette; upper leaves bract-like, scattered and closely appressed to the stem; lamina oblong to elliptical, 10-45 mm long, 3-12 mm wide, dark green with some translucent interveinal areas; base stem-clasping; margins entire; apex long-acuminate to aristate. *Scape* smooth. *Ovary* 6-12 mm long, green, smooth, asymmetric. *Flower* solitary, leaning forwards, 80-120 mm long, 10-12 mm across, transparent to translucent white with darker green veins; petals and sepaline pad green and light brown. *Galea* widest at the base when viewed from the front and narrowed upwards, constricted suddenly in distal two-thirds; from the side concave near the middle and curved forwards in distal third, ending in an obliquely erect to erect apical point. *Dorsal sepal* 50-65 mm long including the apical point, 20-26 mm wide when flattened, laterally inflated at the base then gradually tapered, ending in a filiform point 15-25(-30) mm long, translucent with prominent green longitudinal veins and finer transverse and reticulate veins. *Lateral sepals* deflexed, 50-60 mm long; conjoined part 10-13 mm long, 4-5 mm wide, central pad raised and shallowly mounded, light greenish brown, more or less papillate, margins green, infolded; free points widely divergent, 35-50 mm long, linear-filiform, pale green, distal margins infolded, apex filiform. *Petals* 35-42 mm long, falcate; basal part 13-18 mm long, 3-4 mm wide, light greenish brown with translucent interveinal areas; basal flange vestigial; distal part 20-25 mm long, filiform-tapered to flagelliform. *Labellum* porrect, 22-30 mm long, erect at the very base then suddenly curved and projecting forwards through the basal frontal opening. *Labellum hinge* c. 2.5 mm long, white. *Labellum lamina* dark reddish brown; basal beak narrowly ovate, c. 3 mm long, c. 1.5 mm across, notched; lamina linear-filiform 18-28 mm long, c. 0.5 mm wide; apical knob swollen, claw-like, c. 2 mm long, 1.8 mm wide, dark reddish brown. *Labellum hairs* of three types; white hairs on basal beak c. 1.5 mm long; fine yellow hairs restricted to the proximal part of the lamina, held more or less erect in two rows on the dorsal side of the lamina, c. 2 mm long; coarse pale yellow hairs widely spaced along the lamina (8-12 pairs, 8-10 mm long) arising from the labellum margins and projected outwards and downwards. *Column* 22-28 mm long, curved away from the ovary at about 60° at the base then obliquely erect, light greenish-white, broadest just near the base of the column wings. *Column wings* projected forwards, 8-10 mm long, c. 5 mm wide, shark fin-shaped, translucent white; basal lobe downcurved, c. 4 mm long, 1.5 mm wide, obtuse, inner margins incurved, adorned with short, white, tangled cilia; mid-section c. 5.5 mm long, translucent green; apical lobe linear, 5-6 mm long, somewhat irregular, acute. *Anther* c. 3 mm long, with a short peaked rostrum. *Pollinia* clavate, c. 2.5 mm long, yellow, mealy. *Stigma* central, elliptical, 8-10 mm long, 4 mm wide, raised. *Capsule* not seen. **Fig. 1.**

Distribution and ecology: Endemic to south-western WA where mainly restricted to a small area in the vicinity of and north of the Muirs Highway from Perup to Rocky Gully where it grows in sandy soil in woodlands. There is a disjunct population south of the Stirling Range on Chester Pass Road.

Flowering period: Late September to October.

Recognition: Robust species with large light green and white flowers with a network of darker green veins in the galea and darker green veins and markings in the petals and conjoined base of the lateral sepals, long erect filiform point on the dorsal sepal, long widely divergent filiform free points on the lateral sepals, light greenish brown

petals and sepal pad, and long labellum with relatively long sparse pale yellow hairs.

Similar species: The new species shares the general flower shape of *Plumatichilos barbatus* but the latter has smaller darker green flowers, prominent blackish markings on the petals and a shorter, sparsely hairy labellum. The new species differs from *P. barbatus* by its larger, paler flowers, much longer, filiform free points on all sepals, widely spreading free points of the lateral sepals and a more densely hairy labellum with longer yellow hairs. *Plumatichilos barbatus* has a more north-westerly distribution with *P. longicornis* confined the vicinity of, and north of the Muirs Hwy.

Plumatichilos longicornis is similar to *P. heberlei* but has much broader flowers with longer sepal free points. There is no overlap in the distribution of these two taxa with *P. heberlei* confined to a small area around Albany.

There are similarities between the new species and *Plumatichilos precatoria* but the latter species has broader, more bulbous flowers with shorter sepals, the lateral sepals held almost horizontally with slightly upturned tips, and is found on and around granites, while *P. longicornis* grows in a sandy woodland habitat.

Note: A population of *Plumatichilos* with similar but slightly smaller flowers with long labellum and long free points on dorsal and lateral sepals, flowering in late September has recently been rediscovered between Perth and York, more than 250 km from its nearest known location for *Plumatichilos longicornis*. Further study is required to determine the taxonomic status of this population.

Conservation Status: Of relatively restricted distribution but sometimes locally common and conserved in at least one National Park.

Etymology: The Latin *longus*, long, and *cornis*, horn (in composition), in reference to the long filamentous points on the sepals which resemble horns; this species probably has the longest sepaline tips in the genus.

Other specimens: Western Australia, Darling District: Plot 5470, Muir Highway, 1.9 km W of Thompson Road, 48 km ESE of Manjimup, 10 November 1993, A.R. Annels ARA 4090 (PERTH 04573366); Muirs Highway, E side off Tonebup Road, 8 October 1994, W. Jackson BJ 300 (PERTH 04447220); Unicup Nature Reserve, N side unnamed lake, 2 km S Wingebellup Road, 21 October 1997, G.J. Keighery & N. Gibson 2593 (PERTH 05212723); 200 m W corner of Meribup Road and Lake Muir Road, 1 October 2000, C.J. French CJF 2664 (CANB 624681).

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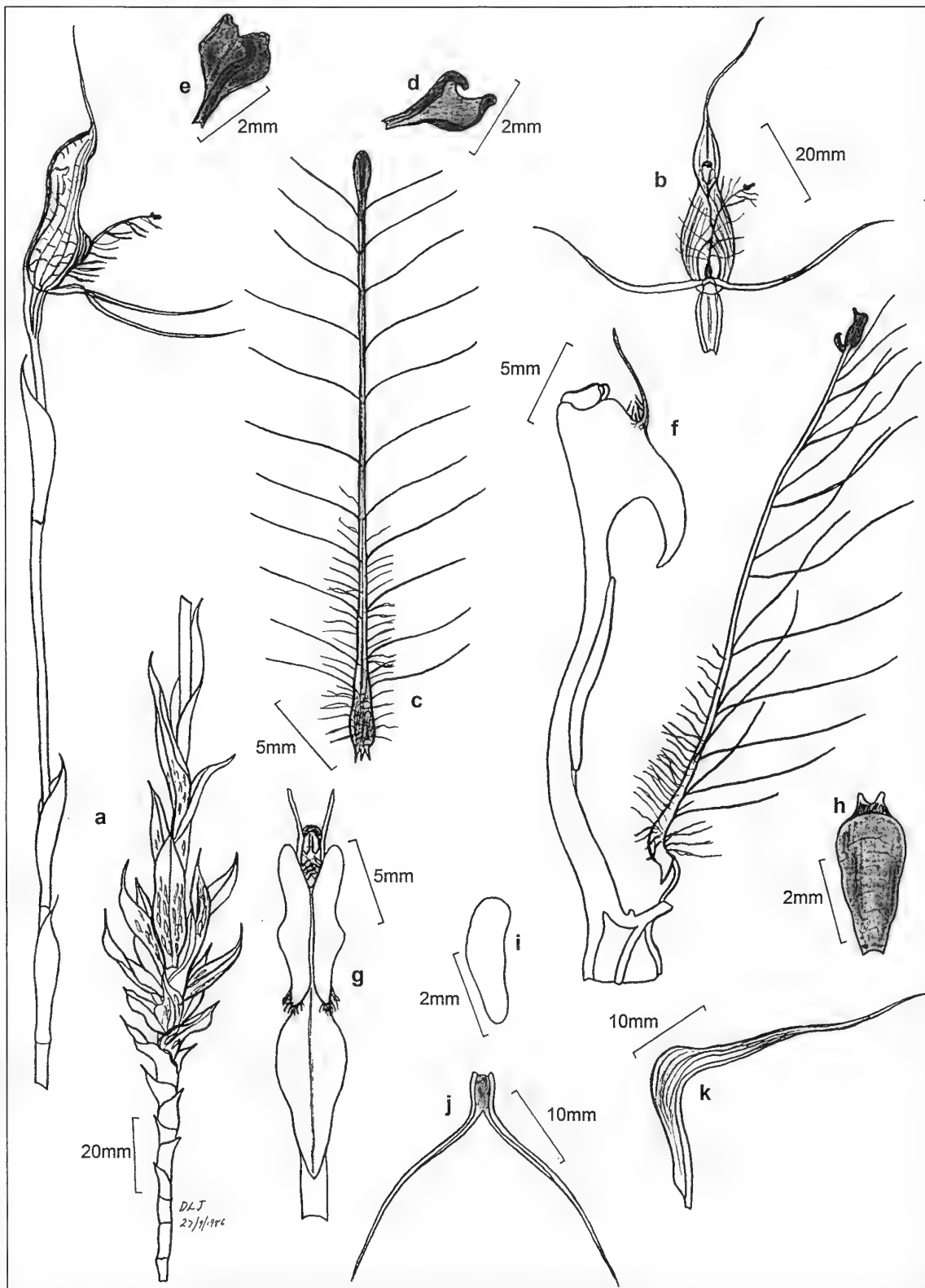
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***Plumatichilos longicornis*, Muirs Highway, WA, D.L.Jones. (Fig. 1.)**

a. flowering plant; b. flower from front; c. labellum; d. labellum apical knob from side; e. labellum apical knob from top; f. column and labellum from side; g. column from front; h. basal beak on labellum; i. pollinium; j. synsepalum; k. petal.

Drawing: 27-9-1986, © David L. Jones.

2. *Plumatichilos precatorius* D.L.Jones, C.J.French & M.A.Clem., *sp. nov.* With affinity to *Plumatichilos barbatus* (Lindley) Szlachetko but differing by its larger flowers (70-85 mm long cf. 55-65 mm long for *P. barbatus*), longer lateral sepals (35-42 mm cf. 24-37 mm long for *P. barbatus*) spreading almost horizontally with turned up tips, longer free point on the dorsal sepal (20-24 mm cf. 8-15 mm long for *P. barbatus*) which is slightly curved to erect (suberect to erect in *P. barbatus*) and the labellum coarse yellow hairs are longer (6-10 mm cf. 3-6 mm long for *P. barbatus*) and slightly denser.

Type: Western Australia. Darling District, Mehinup Nature Reserve, 8 September 1997, D.L.Jones 15444 (holo CANB 647977).

Illustrations: Page 398, Brown, Dixon, French & Brockman (2013), as *Pterostylis* sp. "Mehinup". – "Mehinup Bird Orchid".

Description: *Sterile rosette* with 9-17 leaves, spreading; petiole 0-7 mm long; lamina narrowly elliptic to elliptic, 5-12 mm long, 3-5 mm wide, green, margins entire, apex long-acuminate. *Fertile plants* 20-30 cm tall. *Cauline leaves* 10-18, obliquely erect to erect; basal leaves crowded in an extended rosette; upper leaves bract-like, scattered and closely appressed to the stem; lamina oblong to elliptical, 10-35 mm long, 5-10 mm wide, dark green with some translucent interveinal areas; base stem-clasping; margins entire or undulate; apex long-acuminate to aristate. *Scape* smooth. *Ovary* 6-10 mm long, green, smooth, asymmetric. *Flower* solitary, leaning forwards, 70-95 mm long, 10-12 mm across, transparent with darker green veins; petals and sepaline pad dark brown to blackish. *Galea* widest at the base when viewed from the front and narrowed upwards, constricted suddenly in the distal two-thirds; from the side shallowly concave near the middle, curved forwards in distal third, ending in a straight or curved, erect apical point. *Dorsal sepal* 42-60 mm long including the apical point, 20-24 mm wide when flattened, laterally inflated near the middle then gradually tapered, ending in a filiform point 15-24 mm long, translucent with prominent green longitudinal veins and finer transverse and reticulate veins. *Lateral sepals* obliquely deflexed to nearly horizontal, 35-50 mm long, tips upturned; conjoined part 6-8 mm long, 4-6 mm wide, central pad raised and shallowly mounded, brown to blackish, more or less papillate, margins green, infolded; free points nearly parallel to divergent, 29-40 mm long, narrowly linear-tapered, green, distal margins infolded, apex finely acuminate. *Petals* 20-42 mm long, falcate; basal part 9-13 mm long, 2-3 mm wide, brown to blackish with translucent interveinal areas; basal flange small; distal part 11-27 mm long, filiform-tapered to flagelliform. *Labellum* porrect, 18-27 mm long, obliquely erect at the very base then curved and projecting forwards through the basal frontal opening. *Labellum hinge* c. 1.5 mm long, white. *Labellum lamina* greenish brown to brown; basal beak narrowly ovate, c. 3 mm long, c. 1.5 mm across; lamina linear-filiform 13-20 mm long, c. 0.3 mm wide; apical knob slender, c. 2.5 mm long, 1.3 mm wide, dark reddish brown. *Labellum hairs* of three types; very few short white hairs on basal beak; fine white to yellow hairs restricted to the proximal part of the

lamina, held more or less erect in two rows on the dorsal side of the lamina, c. 2 mm long; coarse yellow hairs few, widely spaced over most of the lamina (16-22 pairs evenly distributed, not in discernable pairs, 6-10 mm long) arising from the labellum margins and spreading or obliquely descending. *Column* 18-22 mm long, curved away from the ovary at about 60° at the base then obliquely erect, light greenish-white, broadest just near the base of the column wings. *Column wings* projected forwards, 6-7 mm long, c. 4 mm wide, shark fin-shaped, translucent white; basal lobe downcurved, c. 2.5 mm long, 1.2 mm wide, obtuse, inner margins incurved, adorned with short, white, tangled cilia; mid-section c. 4 mm long, translucent green; apical lobe linear, 5-6 mm long, somewhat irregular, sparsely hirsute. *Anther* c. 3 mm long, with a short peaked rostrum. *Pollinia* oblong-clavate, c. 2.3 mm long, yellow, mealy. *Stigma* central, elliptical, 8-10 mm long, 3.5 mm wide, raised. *Capsule* not seen. **Fig. 2.**



Plumatichilos precatorius
Ficifolia Road,
October 2002

Distribution and ecology:

Endemic to south-west Western Australia where restricted to a small area between Denmark and Broke Inlet, growing in shallow soil pockets on and around granite outcrops in high rainfall forest.

Flowering period: Late August to late September.

Recognition: Characterised by relatively large pale green flowers with a network of darker green veins in the galea and brown veins and markings in the petals and conjoined base of the lateral sepals, long erect to curved back free point on the dorsal sepal, long slightly upturned free points on the widespread, almost horizontal lateral sepals and a long hairy labellum (with evenly distributed coarse yellow hairs) with a narrow dark brown apical knob.

Similar species: The new species shares the general flower shape and colouration of *Plumatichilos barbatus* but the latter has smaller darker green flowers, prominent blackish markings on the petals and a sparsely hairy labellum with a small, narrow apical knob. The new species differs from *P. barbatus* by its larger, paler flowers, widespread, almost horizontal lateral sepals with slightly upturned free points, and a more densely hairy labellum with longer coarse yellow hairs and a larger apical knob. *Plumatichilos barbatus* has a more north westerly distribution with *P. precatorius* confined to southern, near coastal granites between Denmark and Broke Inlet.

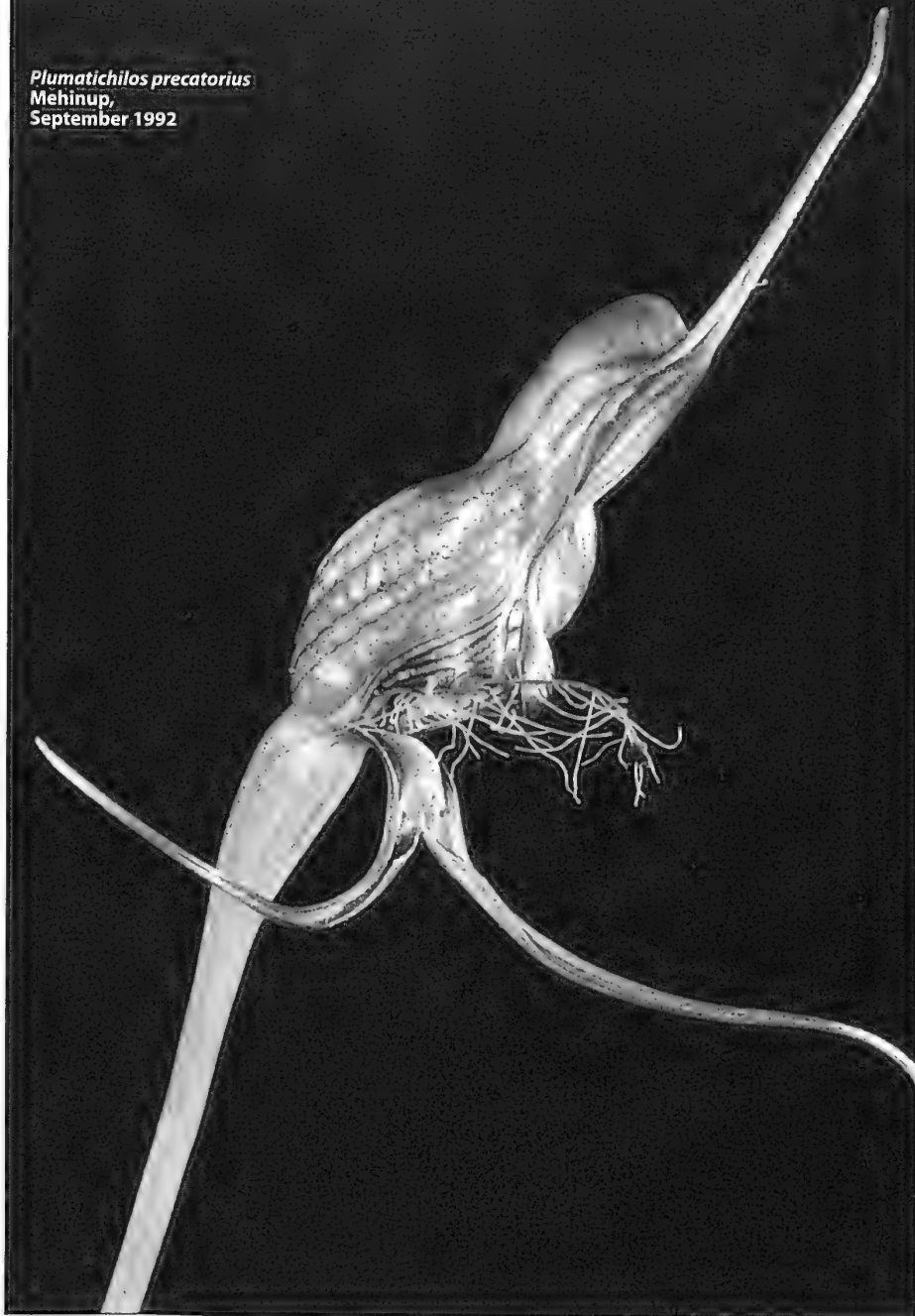
Note: The accompanying drawing shows the lateral sepals more upright than is usual; the flowers were past their best when the drawing was prepared.

Conservation Status: Of relatively restricted distribution but sometimes locally common and conserved in at least one National Park.

Etymology: The Latin *precatorius*, pray, entreat, in reference to the attitude of the free points of the lateral sepals.

Other specimens: Western Australia, Darling District: Mehinup Rock [Hill] - lower portion on western side of rock, under larger shrubs, 4 Sept. 1994, *W.Jackson* (BJ 290) (PERTH 04446925); Granite Road, Denmark opposite Pt 5056, Map Name: Denmark, Map Ref: JP 135 21, 24 Sept. 1991, *A.R.Annels* 1682 (PERTH 03175170); Large flat granite area ca 1 km N from Little Lindesay, 15 Sept. 1995, *B.G.Hammersley* 1403 (PERTH 06850324); 13 km WSW of Walpole. Walpole Nornalup National Park, Pt. 235 (now 3235) KD9768, 6 Sept. 1988, *A.R.Annels* 328 (PERTH 02660911); Alongside Kent River, 36 km E of Walpole on road to Denmark, *C.J.French* (D.L.Jones 10023) (CANB 663517); Granite rock on Bibbulmun Track off Ficifolia Road, 5 Oct. 2002, *C.J.French* (CJF 3545) (CANB 648229); Ficifolia Road, 1 km from Nutt Road, 24 Sept. 2000, *C.J.French* (CJF 2556) (CANB 624650).

Plumatichilos precatorius
Mehinup,
September 1992



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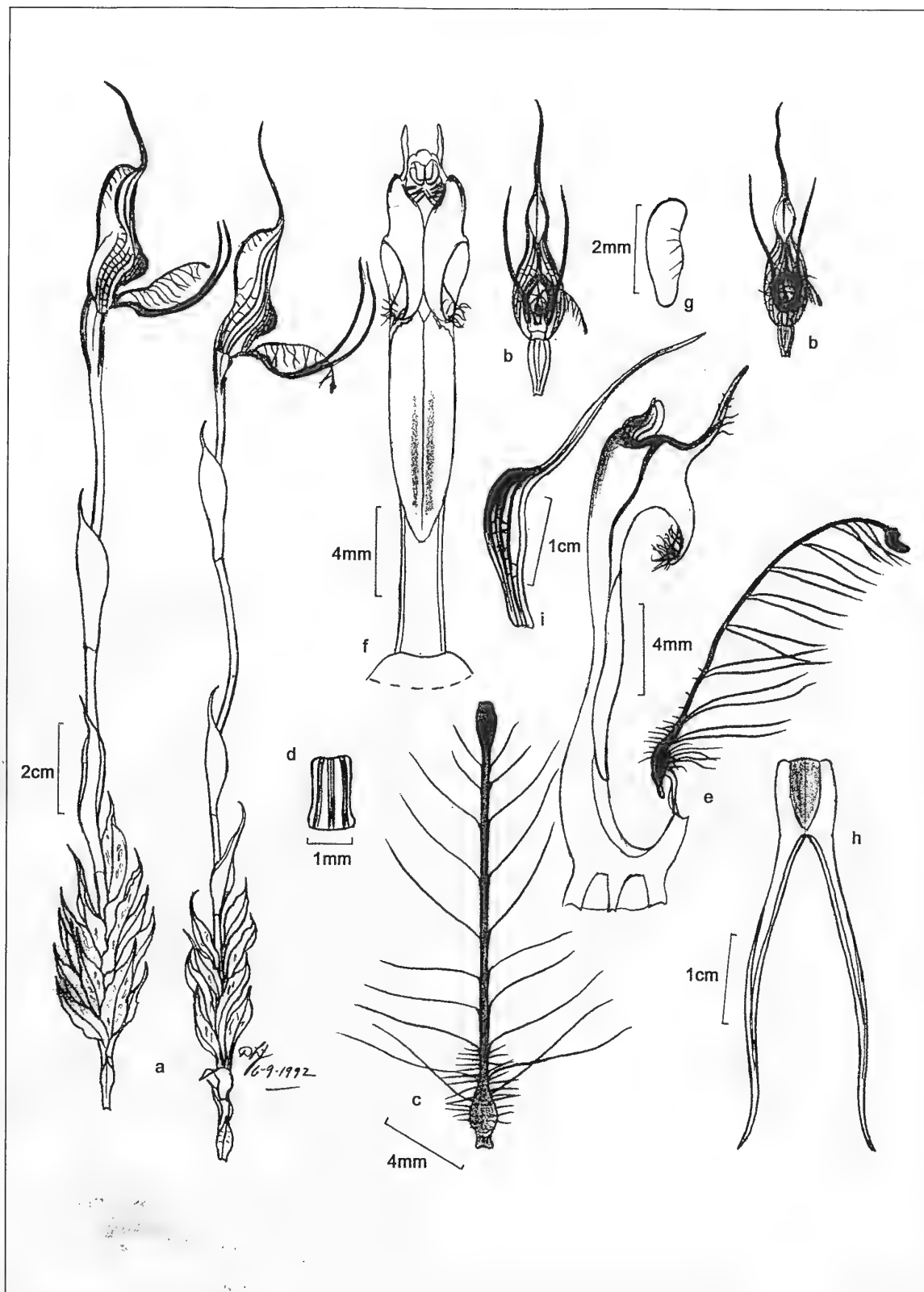
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***Plumatichilos precatorius*, East of Walpole, WA, C.French. (Fig. 2.)**

a. flowering plants; b. flowers from front; c. labellum; d. labellum hinge; e. column and labellum from side;
f. column from front; g. pollinium; h. synsepalum; i. petal.

Drawing: 6-9-1992, © David L. Jones.

3. *Plumatichilos saxosus* D.L.Jones & C.J.French, *sp. nov.* With affinity to *Plumatichilos turfusus* (Endl.) Szlachetko but differing by its generally shorter stature (9-15 cm tall *cf.* 10 – 32 cm tall for *P. turfusus*), smaller (50-60 mm long *cf.* 55-80 mm long for *P. turfusus*), narrower flowers, erect dorsal sepal (obliquely erect for *P. turfusus*), parallel to slightly separated lateral sepals (generally divergent for *P. turfusus*) and granite habitat.

Type: Western Australia. Darling District, Fish Creek Track, 2.9 km S of Chesapeake Road, 29 Sep. 2000, C.J.French 2619 (holo CANB 624668).

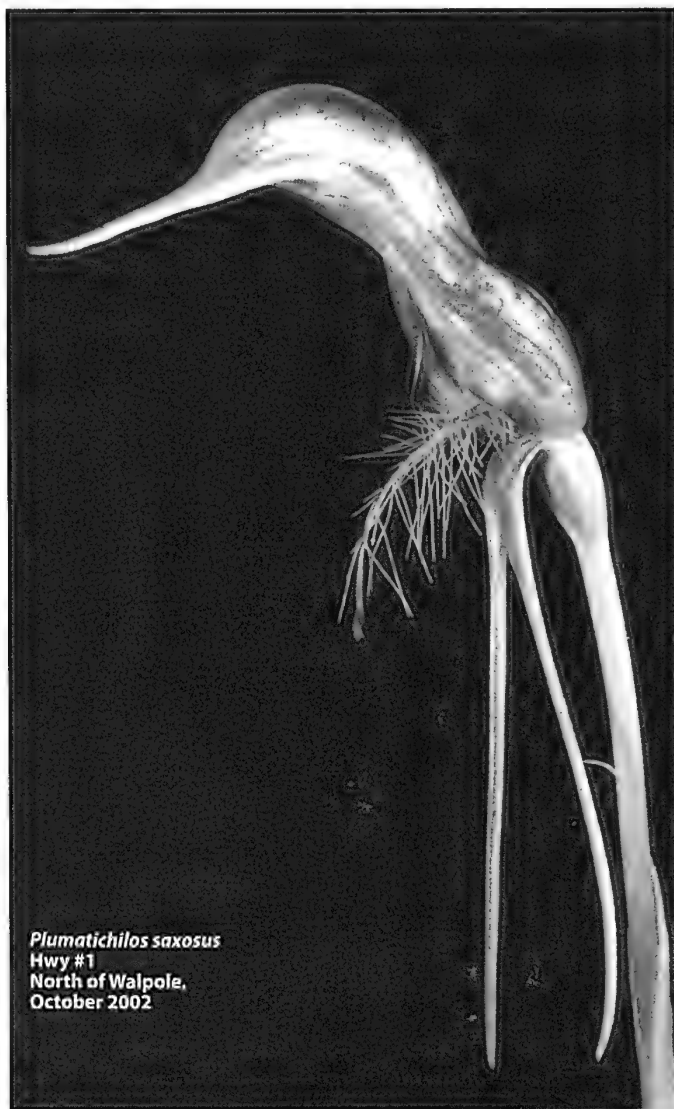
Illustrations: Page 397, Brown, Dixon, French & Brockman (2013), as *Pterostylis* sp. "granite bird" – "Granite bird orchid".

Description: *Sterile rosette* with 5-12 leaves, spreading; petiole 0-3 mm long; lamina narrowly elliptic to elliptic, 5-13 mm long, 3-6 mm wide, green, margins entire, apex long-acuminate. *Fertile plants* 9-15 cm tall. *Cauline leaves* 8-15, obliquely erect to erect; basal leaves crowded in an extended rosette; upper leaves bract-like, scattered and closely appressed to the stem; lamina oblong to elliptical, 5-25 mm long, 2-5 mm wide, dark green with some translucent interveinal areas; base stem-clasping; margins entire; apex long-acuminate to aristate. *Scape* smooth. *Ovary* 6-10 mm long, green, smooth, asymmetric. *Flower* solitary, erect to leaning forwards, 50-60 mm long,

8-10 mm across, transparent to translucent white with darker green veins; petals and sepaline pad green. *Galea* widest at the base when viewed from the front and narrowed upwards, constricted suddenly in distal two-thirds; from the side nearly flat to shallowly concave near the middle, curved forwards in distal third, ending in a straight or curved, obliquely erect apical point. *Dorsal sepal* 30-45 mm long including the apical point, 13-16 mm wide when flattened, laterally inflated at the base then gradually tapered, ending in a filiform point 10-15 mm long, translucent with prominent green longitudinal veins and finer transverse and reticulate veins. *Lateral sepals* deltexed, 25-42 mm long; conjoined part 6-10 mm long, 3-4 mm wide, central pad raised and shallowly mounded, green, more or less papillate, margins green, infolded; free points nearly parallel to divergent, 18-33 mm long, narrowly linear-tapered, green, distal margins infolded, apex finely acuminate. *Petals* 22-32 mm long, falcate; basal part 7-10 mm long, 3-4 mm wide, green with translucent interveinal areas; basal flange small; distal part 15-22 mm long, filiform-tapered to flagelliform. *Labellum* porrect, 18-25 mm long, erect at the very base then suddenly curved and projecting forwards through the basal frontal opening. *Labellum hinge* c. 2 mm long, white. *Labellum lamina* reddish brown; basal beak narrowly ovate, c. 2.5 mm long, c. 1.3 mm across; lamina linear-filiform 12-17 mm long, c. 0.3 mm wide; apical knob swollen, c. 2 mm long, 1 mm wide, dark reddish brown. *Labellum hairs* of three types; white hairs on basal beak c. 1.5 mm long; fine yellow hairs restricted to the proximal part of the lamina, held more or less erect in two rows on the dorsal side of the lamina, c. 2 mm long; coarse yellow hairs over most of the lamina



Plumatichilos saxosus
Fish Creek Track,
October 1994



Plumatichilos saxosus
Hwy #1
North of Walpole,
October 2002

(12-18 pairs, 6-8 mm long) arising from the labellum margins and projected at various angles from obliquely erect to descending. *Column* 13-17 mm long, curved away from the ovary at about 60° at the base then obliquely erect, light greenish-white, broadest just near the base of the column wings. *Column wings* projected forwards, 5-7 mm long, c. 4 mm wide, shark fin-shaped, translucent white; basal lobe downcurved, c. 3 mm long, 1.3 mm wide, obtuse, inner margins incurved, adorned with short, white, tangled cilia; mid-section c. 4 mm long, translucent green; apical lobe linear, 4-5 mm long, somewhat irregular, acute. *Anther* c. 3 mm long, with a short peaked rostrum. *Pollinia* clavate, c. 2.3 mm long, yellow, mealy. *Stigma* central, elliptical, 7-8 mm long, 3.5 mm wide, raised. *Capsule* not seen.

Distribution and ecology: Endemic to south-west Western Australia between Albany and Shannon growing in shallow soil pockets on and around granite rocks.

Flowering period: Late September to late October - early November.

Recognition: Characterised by short habit, relatively small light green and white narrow flowers with a network of darker green veins in the galea and darker green veins and markings in the petals and conjoined base of the lateral sepals, long, erect free point on the dorsal sepal, long parallel or slightly separated free points on the lateral sepals which hang straight down and a densely hairy labellum with bright yellow hairs and a small brown apical knob.

Similar species: The new species shares the general flower shape and colouration of *Plumatichilos turfusus* but the latter is generally taller growing with larger flowers, a more forward-facing free point on the dorsal sepal, wider spread free points on the lateral sepals and much greater habitat range including

granite, woodland, shrubland, forest, swamp and consolidated sand dunes.

The new species differs from *P. serotinus* by its shorter stature, smaller, narrower, paler green flowers, longer, erect pointed dorsal sepal and almost parallel, narrower, lateral sepal free points hanging straight down (almost dangling). *Plumatichilos saxosus* occupies granitic niches within the ranges of both *P. turfusus* and *P. serotinus* but has smaller narrower flowers and shorter stature. Both *Plumatichilos serotinus* and *P. turfusus* have slightly overlapping but later flowering periods compared with *P. saxosus*.

Conservation Status: Scattered within its range of distribution due to its granitic habitat, sometimes locally common and conserved.

Etymology: The Latin *saxosus*, rocky, full of rocks, in reference to the preferred habitat of this species, shallow soil pockets on granite outcrops.

Other specimens: Western Australia, Darling District: Flat rock verge, c. 17 km NW of Walpole, c. 50 m off the South Coast Highway, E side, 28 September 1995, *W.Jackson BJ 340* (PERTH 04278917); Gladstone Falls on edge of granite, 17 km NW of Walpole. 31 Oct. 1990, *A.R.Annels (ARA 1264)* (PERTH 04557719 - sheet has two specimens of *Plumatichilos saxosus* and one of *P. serotinus*); Woolbale Hills, 6 Oct. 1997, *E.D. Middleton (EDM 55)* (PERTH 04947517); Highway 1, 16.9 km N Thompson Road, Walpole, 2 Oct. 2000, *C.J.French (CJF 2672)* (CANB 624684); Granite rock on Bibbulmun Track off Ficifolia Road, 5 Oct. 2002, *C.J.French (CJF 3544)* (CANB 648228); Highway 1, 18 km NW Walpole, 6 Oct. 2002, *C.J.French (CJF 3559)* (CANB 648234); Highway 1, 17.2 km NW Walpole, 6 Oct. 2002, *C.J.French (CJF 3557)* (CANB 648233); c. 5 km along Frankland Rd, 21 Oct. 1993, *D.L.Jones 12456* (CBG 9710426).

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4. *Plumatichilos serotinus* D.L.Jones, C.J.French & M.A.Clem., *sp. nov.* With affinity to *Plumatichilos barbatus* (Lindley) Szlachetko but differing by its lighter green flowers with dark green veins in the galea, petals and conjoined base of the lateral sepals (blackish or brown veins in *P. barbatus*), longer dorsal sepal point (14-18 mm *cf.* 8-15 mm long for *P. barbatus*), green to olive green labellum with dense yellow hairs, thicker sepal free points, later flowering period and more southerly distribution.

Type: Western Australia. Darling District, The Knoll, Walpole, N side of Knoll, 15 October 1995, W.Jackson BJ355 (holo PERTH 04278690).

Illustrations: Page 376, Hoffmann & Brown, second edition (1998) – as *Pterostylis* aff. *turfosa* – “Late Bird Orchid”. Page 400, Brown, Dixon, French & Brockman (2013), as *Pterostylis* sp. “The Knoll”. – “Late bird orchid”

Description: *Sterile rosette* with 5-16 leaves, spreading; petiole 0-3 mm long; lamina narrowly elliptic to elliptic, 5-15 mm long, 3-9 mm wide, green, margins entire, apex long-acuminate. *Fertile plants* (8-)15-25(-39) cm tall. *Cauline leaves* 10-18, obliquely erect to erect; basal leaves crowded in an extended rosette; upper leaves bract-like, scattered and closely appressed to the stem; lamina oblong to elliptical, 10-40 mm long, 5-10(-13) mm wide, dark green with some translucent interveinal areas; base stem-clasping;

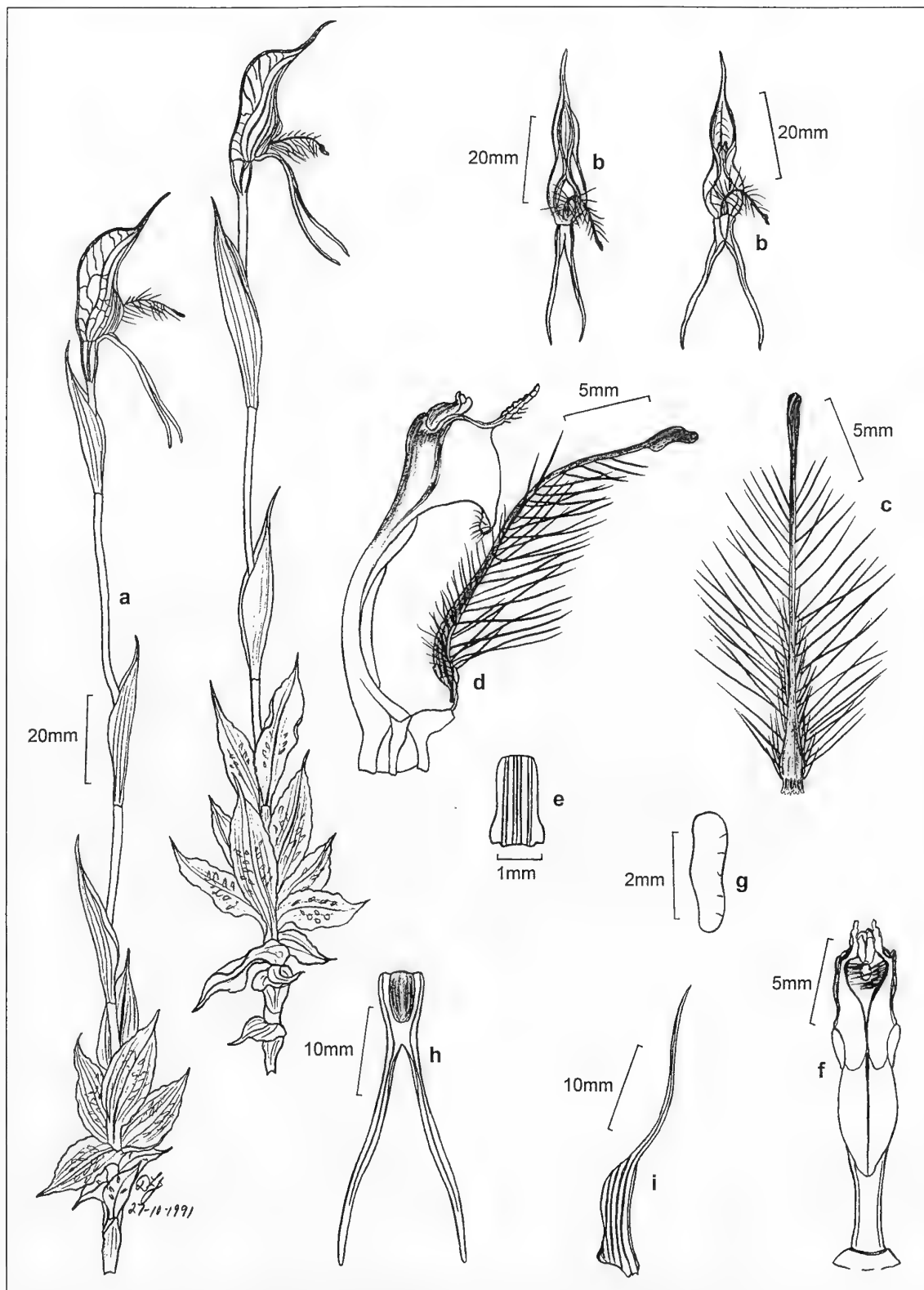
margins entire; apex long-acuminate to aristate. *Scape* smooth. *Ovary* 5-8 mm long, green, smooth, asymmetric. *Flower* solitary, erect to leaning forwards, 55-70(-80) mm long, 6-8 mm across, transparent to translucent white with darker green veins; petals and sepaline pad green. *Galea* widest at the base when viewed from the front and narrowed upwards, constricted suddenly near the middle; from the side nearly flat to shallowly concave near the middle, curved forwards in distal third, ending in a straight or curved, obliquely erect apical point. *Dorsal sepal* 30-45 mm long including the apical point, 14-18 mm wide when flattened, laterally inflated at the base then gradually tapered, ending in a filiform point 7-15 mm long, translucent with prominent green longitudinal veins and finer transverse and reticulate veins. *Lateral sepals* deflexed, 25-37 mm long; conjoined part 6-9 mm long, 3-4 mm wide, central pad raised and shallowly mounded, green, more or less papillate, margins green, infolded; free points nearly parallel to divergent, 17-30(-40) mm long, narrowly linear-tapered, green, distal margins infolded, apex finely acuminate. *Petals* 18-30 mm long, falcate; basal part 7-10 mm long, 2-3 mm wide, green with translucent interveinal areas; basal flange small; distal part 15-22 mm long, filiform-tapered to flagelliform. *Labellum* porrect, 15-20 mm long, erect at the very base then curved and projecting forwards through the basal frontal opening. *Labellum hinge* c. 2 mm long, white. *Labellum lamina* reddish brown; basal beak narrowly ovate, c. 2.5 mm long, c. 1.2 mm across; lamina linear-filiform 10-15 mm long, c. 0.3 mm wide; apical knob slender, c. 2.5 mm long, 1 mm wide, dark reddish brown. *Labellum hairs* of three types; white hairs on basal beak c. 1.5 mm long; fine yellow hairs restricted to the proximal part of the lamina, held more or less erect in two



Plumatichilos serotinus
The Knoll Walpole,
November 2009



Plumatichilos serotinus
Thompson Rd
North of Walpole,
October 2011



***Plumatictilos serotinus*, Muirs Highway, WA, D.L.Jones 8315. (Fig. 3.)**

a. flowering plants; b. flowers from front; c. labellum; d. column and labellum from side; e. labellum hinge;
f. column from front; g. pollinium; h. lateral sepals; i. petal.

Drawing: 27-10-1991, © David L. Jones.

rows on the dorsal side of the lamina, c. 2 mm long; coarse yellow hairs numerous, crowded over most of the lamina (20-26 pairs, 6-8 mm long) arising from the labellum margins and projected at various angles from obliquely erect to descending. *Column* 14-18 mm long, curved away from the ovary at about 60° at the base then obliquely erect, light greenish-white, broadest just near the base of the column wings. *Column wings* projected forwards, 5-6 mm long, c. 3.5 mm wide, shark fin-shaped, translucent white; basal lobe downcurved, c. 2 mm long, 1.2 mm wide, obtuse, inner margins incurved, adorned with short, white, tangled cilia; mid-section c. 4 mm long, translucent green; apical lobe linear, 3-4 mm long, somewhat irregular, sparsely hirsute. *Anther* c. 3 mm long, with a short peaked rostrum. *Pollinia* oblong-clavate, c. 2.5 mm long, yellow, mealy. *Stigma* central, elliptical, 7-8 mm long, 3.5 mm wide, raised. *Capsule* not seen. **Fig. 3.**

Distribution and ecology: Endemic to south-west Western Australia between Dardanup and Augusta, east to Albany growing in high rainfall woodlands and forest in sand, laterite and occasionally on the margins of granite rocks.

Flowering period: October to late November (- early December).

Recognition: Characterised by relatively large light green and white flowers with a network of darker green veins in the galea and darker green veins and markings in the petals and conjoined base of the lateral sepals, short thick oblique free point on the dorsal sepal, thick free points on the widespread lateral sepals and a hairy labellum with long, dense yellow hairs and a narrow green to brown apical knob.

Similar species: The new species shares the general flower shape and colouration of *Plumatichilos barbatus* but the latter has thinner free points on the dorsal and lateral sepals, shorter free point on the dorsal sepal, longer lateral sepals, prominent blackish veins in the galea and blackish to dark brown veins and markings in the petals and conjoined base of the lateral sepals and a sparsely hairy labellum with a small, black to dark brown narrow apical knob. The new species differs from *Plumatichilos barbatus* by its paler flowers lacking blackish or dark brown colouration, thickened sepal free points, longer dorsal sepal free point, shorter lateral sepals, a more densely hairy labellum (with long yellow hairs) and a green to brown apical knob. *Plumatichilos barbatus* has a more north-westerly distribution and earlier flowering period.

Notes: *Plumatichilos serotinus* is sympatric with *P. turfusus* and *P. saxosus* but has plumper flowers with thicker sepal free points, darker green veins in the galea, darker green veins and markings in the petals and conjoined base of the lateral sepals and a generally longer flowering period.

Typically, *Plumatichilos serotinus* grows between 150 to 250 mm tall. However, plants growing in the open in very shallow soil on flat granite can be as short as 80-100 mm while those in deeper soil in sheltered forest may reach 390 mm tall.

Conservation Status: Widespread, sometimes locally common and conserved.

Etymology: The Latin *serotinus*, late in forming leaves or flowering, referring to its late flowering period.

Other specimens: Western Australia, Darling District: South Coast Highway, 0.9 km E of Rate Road, 10 Nov. 2002, C.J.French (CJF 3617) (CANB 648240); Pile Road E of Dardanup, 2 Nov. 1996, C.J.French (CJF 462) (CANB 665428); Freshwater Drive, Margaret River, 2 Nov. 1996, C.J.French (CJF 470) (CANB 665429); Caves Road, 2.5 km S Red Gate Road, 3 Nov. 1996, C.J.French (CJF 476) (CANB 665430); E of Augusta, Milyeannup Road, 500 m E of Scott

River Road, 7 Nov. 1995, C.J.French (DLJ 14593) (CANB 9609666); Off South Coast Highway, c. 10 km NW of Walpole, 200 m from Deep River Bridge, 8 October 1995, W.Jackson BJ364 (PERTH 04278739); Pingerup [Rd], approximately 500 m West of South Coast Highway, 19 October 1997, W.Jackson BJ488 (PERTH 05447402); Deep 6 Forest coupe, south side of West Road, 25 October 1997, W.Jackson BJ503 (PERTH 05447283); W side off South Coast Highway, ca 2.8 km NW of Broke Inlet Road, 100 m in from Highway, 14 October 1995, W.Jackson BJ357 (PERTH 04447174); Mount Lindesay track, approximately half way to summit, N of Albany, 20 October 1998, P.Johns 65 (PERTH 05526485); Wellington Mills, Discovery Forest Trail, 18 October 1996, R.J. Cranfield 10792 (PERTH 04528085).

5. *Plumatichilos sigmoideus* D.L.Jones & C.J.French, sp. nov. With affinity to *Plumatichilos barbatus* (Lindl.) Szlachetko but differing by its larger flowers (60-80 mm cf. 55-65 mm long for *P. barbatus*) with a wider basal opening to the galea (c. 8 mm across cf. 5 mm across in *P. barbatus*), strongly sigmoid curve in the dorsal sepal and a longer labellum (22-28 mm cf. 22-25 mm for *P. barbatus*) with longer and more numerous, darker yellow hairs.

Type: Western Australia. Darling District, track along railway line S of Balingup, 23 Sep. 2000, C.J.French 2537 (holo CANB 624646).

Illustrations: Page 397, Brown, Dixon, French & Brockman (2013), as *Pterostylis* sp. "Greenbushes" – Sinuous bird orchid.

Description: *Sterile rosette* with 6-12 leaves, spreading; petiole 0-1 mm long; lamina narrowly elliptic to ovate-lanceolate, 5-12 mm long, 3-7 mm wide, green, margins wavy, apex long-acuminate. *Fertile plants* 25-35 cm tall. *Cauline leaves* 10-18, obliquely erect to erect; basal leaves crowded in an extended rosette; upper leaves bract-like, scattered and closely appressed to the stem; lamina ovate-lanceolate to elliptica-lanceolate, 12-45 mm long, 5-12 mm wide, dark green with some translucent interveinal areas; base stem-clasping; margins entire to undulate; apex long-acuminate to aristate. *Scape* smooth. *Ovary* 6-12 mm long, green, smooth, asymmetric. *Flower* solitary, leaning forwards, 60-80 mm long, 13-16 mm across, transparent to translucent white with darker green veins; petals and sepaline pad dark purple brown and white. *Galea* widest just above the base when viewed from the front and narrowed upwards, constricted suddenly in distal three-quarters; from the side curved sigmoidally, deeply concave near the middle and curved forwards in distal third, ending in an obliquely erect to erect apical point. *Dorsal sepal* 50-60 mm long including the apical point, 25-30 mm wide when flattened, laterally inflated at the base then gradually tapered, ending in a filiform point 12-20 mm long, translucent with prominent green longitudinal veins and finer transverse and reticulate veins. *Lateral sepals* deflexed, 40-48 mm long; conjoined part 10-13 mm long, 4-5 mm wide, central pad raised and shallowly mounded, light greenish brown, more or less papillate, margins green, infolded; free points widely divergent, 35-40 mm long, linear-filiform, pale green, distal margins infolded, apex filiform. *Petals* 30-35 mm long, falcate; basal part 12-15 mm long, 3-4 mm wide, light greenish brown with translucent interveinal areas; basal flange well developed; distal part 18-20 mm long, filiform-tapered to flagelliform. *Labellum* porrect, 22-28 mm long, erect at the very base then suddenly curved and projecting forwards through the unusually wide (c. 8 mm across) basal frontal opening. *Labellum hinge* c. 2.5 mm long, white. *Labellum lamina* dark reddish brown; basal beak narrowly ovate, c. 3.5 mm long, c. 1.5 mm across; lamina linear-filiform 18-24 mm long, c. 0.5 mm wide; apical knob narrow, elliptical, c. 3 mm long, 1 mm wide, dark reddish brown. *Labellum hairs* of three types; white hairs on basal beak c. 1.3 mm long; fine yellow hairs restricted to the proximal part of the lamina, held more or less erect in two rows on the dorsal side of the lamina, c. 2 mm long; coarse pale yellow hairs widely spaced along the lamina (8-12 pairs, 8-10 mm long) arising from the labellum margins and projected outwards and downwards. *Column* 22-26 mm long, curved away from the ovary at about 60° at the base then obliquely erect, light greenish-

white, broadest just near the base of the column wings. *Column wings* projected forwards, 8-10 mm long, c. 5 mm wide, shark fin-shaped, translucent white; basal lobe downcurved, c. 3.5 mm long, 1.5 mm wide, obtuse, inner margins incurved, adorned with short, white, tangled cilia; mid-section c. 5 mm long, translucent green; apical lobe linear, 5-6 mm long, somewhat irregular, acute. *Anther* c. 3 mm long, with a short peaked rostrum. *Pollinia* clavate, c. 3.5 mm long, yellow, mealy. *Stigma* central, elliptical, 12-15 mm long, 4 mm wide, raised. *Capsule* not seen. **Fig. 4.**

Distribution and ecology: Endemic to south-western WA between Dardanup and Augusta, inland to south of Manjimup, growing in Jarrah and Jarrah/Marri forest in freely draining lateritic gravel and lateritic loam.

Flowering period: Late September to October.

Recognition: Characterised by tall stature with large, translucent green flowers with darker green netted veins and markings, the flower flattened near the middle with a strongly sigmoid curve in the dorsal sepal, broad basal opening to the galea and a long hairy labellum with numerous long yellow hairs.

Similar species: The new species is similar to *Plumatichilos barbatus* but differs by its larger flowers with a wider basal opening to the galea, strongly sigmoid curve in the dorsal sepal and a longer labellum with longer and more numerous,

darker yellow hairs. *Plumatichilos sigmoideus* also flowers later than *P. barbatus*, generally starting to flower as the latter is finishing. To date, these two species have not been found growing together.

Note: Pressed specimens of *Plumatichilos sigmoideus* often lose the flattened shape in the middle of the flower and the sigmoid curve in the dorsal sepal giving them a similar appearance to dried specimens of *P. barbatus*, however they can be readily distinguished from the latter species by the larger flowers and much more densely hairy labellum.

Conservation Status: Widespread, often locally common and conserved in National Parks.

Etymology: The Latin *sigmoideus*, curved, S-shaped, referring to the curve in the dorsal sepal that is obvious when viewed from the side.

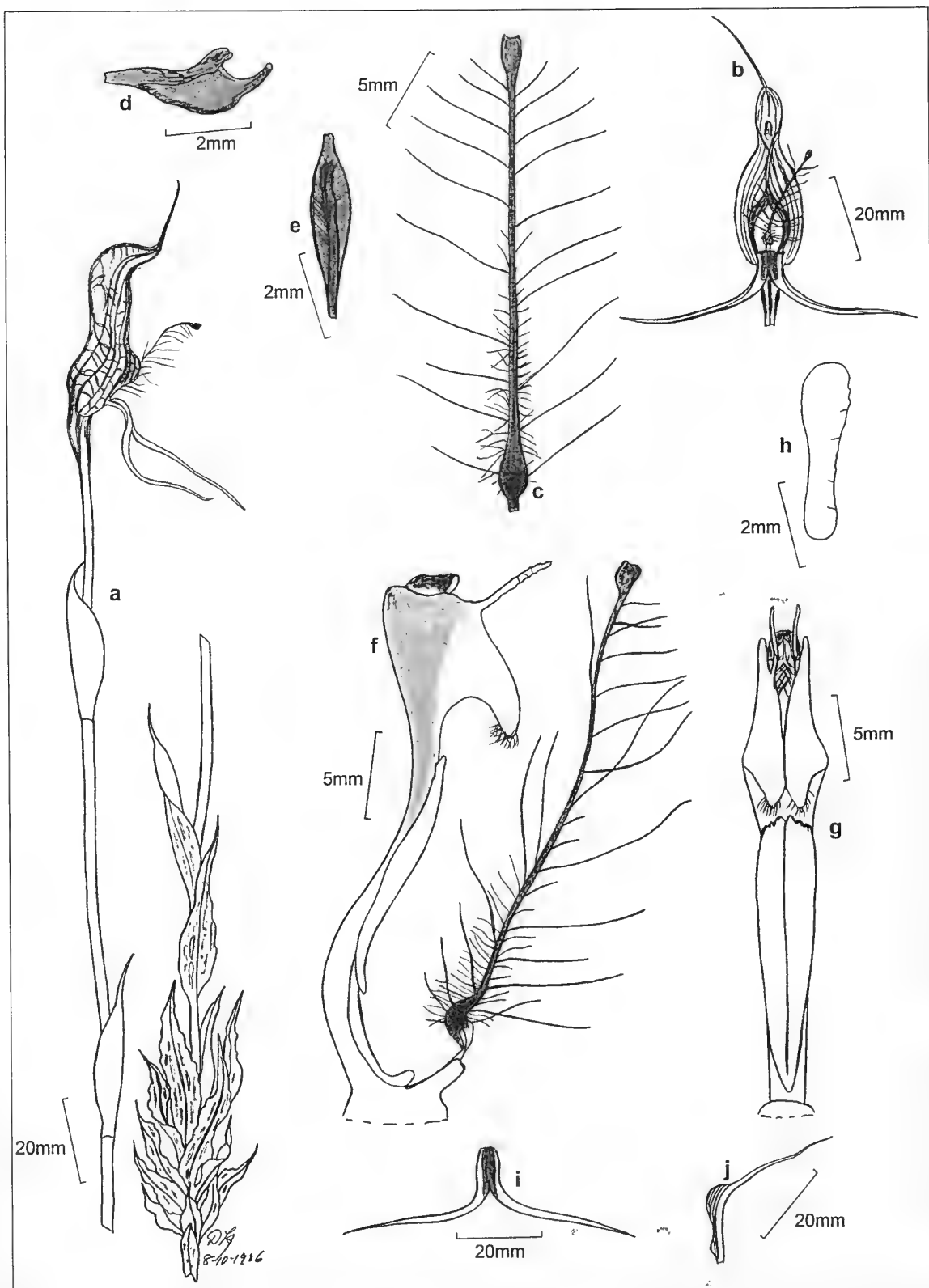
Other specimens: Western Australia, Darling District: Small granite outcrop off S boundary of Yelverton State Forest, North Block, 2 October 1986, *A.P. Brown* 452 (PERTH 06007678); Mersea Lake, c. 12 miles S [of] Bridgetown, near Wilgarrup turnoff, 23 September 1962, *W.A. Loneragan* 96 (PERTH 00922323); Track along railway line N of Greenbushes, 530 m E of Highway 1, 6 October 2002, *C.J. French* CJF 3563 (CANB 648236); Pile Road, E of Dardanup, 23 September 2000, *C.J. French* CJF 2533 (CANB 624645); Abbey Farm Road, Margaret River, 7 October 1992, *I. Sharma* (CANB 673171).

Plumatichilos sigmoideus
Greenbushes,
October 2002



Plumatichilos sigmoideus
North of Jarrawood,
October 2011





***Plumatictilos sigmoideus*, Manjimup, WA, H. Richards. (Fig. 4.)**

a. flowering plant; b. flower from front; c. labellum; d. labellum apical knob from side; e. labellum apical knob from top; f. column and labellum from side; g. column and labellum from front; h. pollinium; i. lateral sepals; j. petal.

Drawing: 8-10-1986, © David L. Jones.

Acknowledgements

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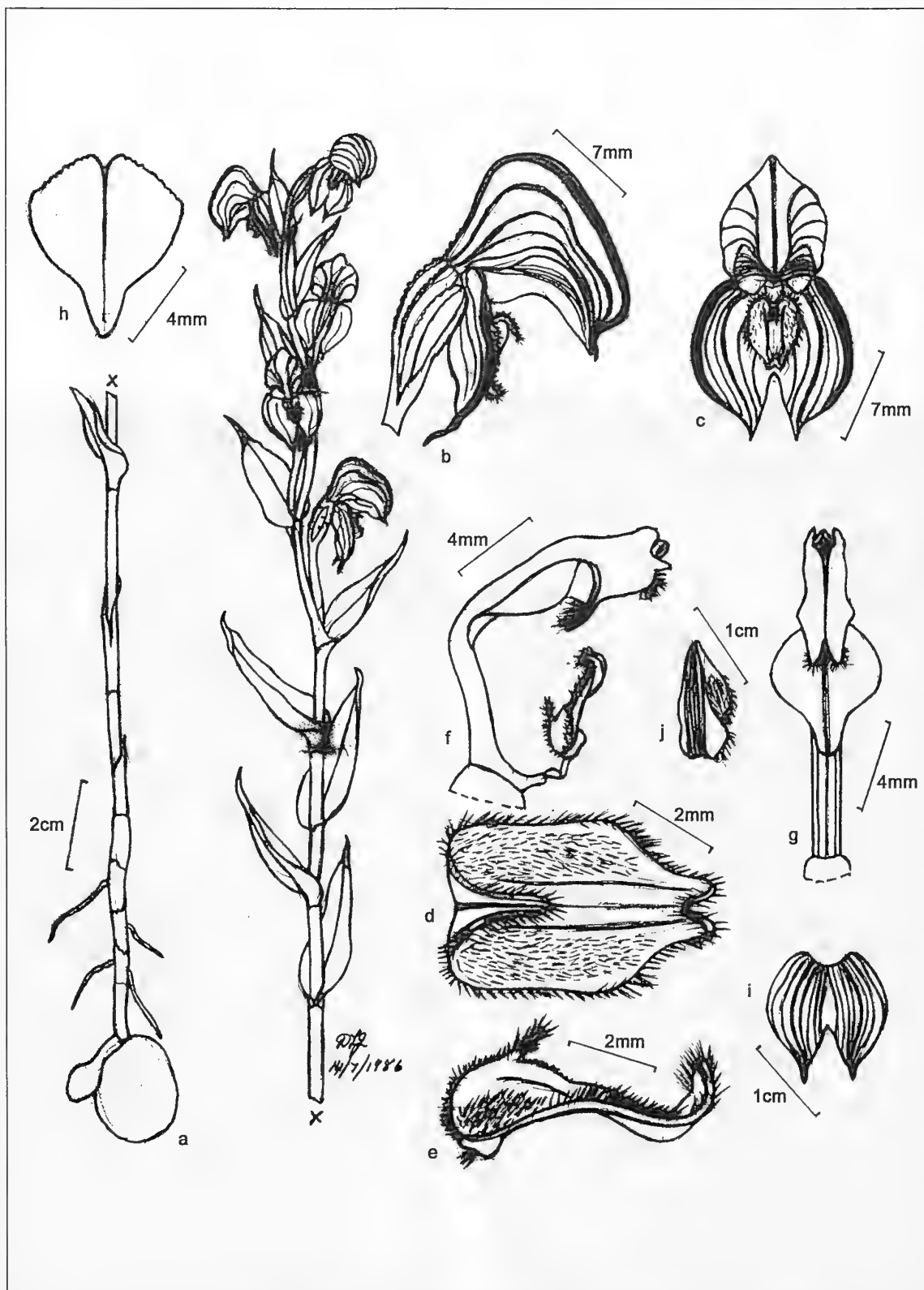
Email: mail4cjfrench@gmail.com

Plumatichilos barbatus
Canning Mills Road,
September 1995



Plumatichilos turfusus
Bremer Bay,
September 1996





***Urochilus sanguineus*, Heathfield, SA, M.A.Clements 4095. (Fig. 1.)**

a: flowering plant; b: flower from side; c: flower from front; d: labellum from above; e: labellum from side; f: column and labellum from side; g: column from front; h: stigma; i: synsepalum; j: petal.

© D.L.Jones 14 July 1986.

Characterisation of *Urochilus sanguineus* (Orchidaceae: Pterostylidinae) and the description of a related new species

by David L. Jones and Christopher J. French

Abstract

Urochilus sanguineus is characterised with a full description and *Urochilus arbusculus*, from Victoria, South Australia and Western Australia, with affinities to *Urochilus sanguineus*, is described as new.

Key Words

Orchidaceae, *Urochilus sanguineus*, *Urochilus arbusculus*, new species, Victoria, South Australia, Western Australia, Australian flora.

Introduction

Pterostylis sanguinea D.L.Jones & M.A.Clem. was named in 1989 with an accompanying illustration but without a detailed description (Clements 1989), and later transferred to the genus *Urochilus* (Jones & Clements 2002). Studies on *Urochilus* in Western Australia have resulted in the description of three new species (Jones & French 2015, 2017) and a study by the senior author over the full range of *Urochilus sanguineus* has established its main features. This paper aims to characterise *Urochilus sanguineus* in the narrow sense and describe a new species from drier inland habitats that has been included within that taxon.

Materials and Methods

Descriptions of the new taxa were made from fresh specimens. Unless otherwise indicated, all types of *Urochilus* relevant to this study (or photographs thereof), and collections cited, have been seen by us.

Taxonomy

1. *Urochilus sanguineus* (D.L.Jones & M.A.Clem.) D.L.Jones & M.A.Clem., *Pterostylis sanguinea* D.L.Jones & M.A.Clem., *Australian Orchid Research* 1: 126-7, fig. 4A-D (1989), *Oligochaetochilus sanguinea* (D.L.Jones & M.A.Clem.) Szlachetko, *Polish Bot. J.* 46(1): 23 (2001).

Type: South Australia, Belair Recreation Reserve, 70 acre Flora Reserve, behind Pines Oval, 9 July 1986, M.A.Clements 4097 & A.S.Clements (holo CBG, iso AD, K).

Illustrations: Bottom plate, page 386, Brown *et al.* (2013), as *Pterostylis sanguinea* - "Dark banded Greenhood"; Page 423, Hoffmann & Brown, third edition (2011) - as *Pterostylis sanguinea* - "Dark banded Greenhood"; Page 359, Hoffmann & Brown, second edition (1998) - as *Pterostylis sanguinea* - "Dark banded Greenhood"; Plate 188, Bates & Weber as *Pterostylis sanguinea*.



Description: *Rosette* carried above ground on a stalk 5-40 mm long; leaves 5-10; lamina ovate, 10-40 mm long, 5-15 mm wide; petioles 0-8 mm long. *Flowering plants* 15-40 cm tall, 1-15-flowered. *Cauline leaves* 8-15, obliquely erect, ovate-lanceolate, 2-6 cm long, 6-12 mm wide, dark green; margins recurved; apex acute, reddish, often twisted. *Pedicels* 3-15 mm long. *Ovaries* obovoid, curved, 10-14 mm long, asymmetric, verrucose. *Flowers* not crowded, semi-nodding, 14-20 mm long, 10-15 mm wide, dark reddish-brown to blackish brown (sometimes green to greenish brown) with translucent areas. *Dorsal sepal* 16-22 mm long, translucent white with dark reddish-brown to blackish brown bands and suffusions, dorsal surface covered with siliceous cells, apex curved sharply forwards, apiculate. *Lateral sepals* deflexed, shallowly recurved back towards the ovary from near the middle, flat with a sunken area beneath the labellum, broadly elliptical to ovate-elliptical, fused over most of their length, 12-18 mm long, 12-15 mm wide, dark red with darker bands; margins incurved, free points triangular, c. 5 mm long, 3-5 mm apart, tips mucronate with incurved margins. *Petals* 12-15 mm long, c. 5 mm across at widest point, nearly straight; dorsal ridge strongly hirsute; anterior blade c. 3 mm wide, translucent with dark red-brown lines. Labellum claw ligulate, c. 2.8 mm long, c. 1.7 mm wide. *Labellum lamina* oblong, shallowly curved above the middle with an upturned apex, 5.5-6.5 mm long, 3.5-4 mm wide, dark reddish-black, dorsal surface and margins densely covered with beaded siliceous cells and short, stiff, bristle-like hairs c. 0.2-0.5 mm; basal lobe c. 2 mm deep; basal appendage erect, caudiform, c. 1 mm long, shortly hairy; labellum apex upturned, shortly bifid, margins of the cleft thickened. *Callus* an obscure narrow central longitudinal ridge c. 1 mm wide, covered with beaded siliceous cells. *Column* erect and sharply incurved below the middle, 14-17 mm long, red brown and white; wings hatchet-shaped, 4.5-6 mm long; basal lobe narrow, c. 2 mm long, the inner surface with tangled white cilia; barrier trichomes clavoid, exerted below the apical lobe; apical lobe c. 0.3 mm long. *Column foot* c. 0.5-1 mm long. *Anther* c. 1 mm long, blunt or shortly apiculate. *Pollinia* oblong, curved, c. 1.2-1.5 mm long, yellow. *Stigma* deltate to broadly scutiform, 6.5-8 mm long, 6-7 mm wide, bifid, upper margins irregular. *Capsules* obovoid, 8-9 mm long, 3-5 mm wide, verrucose. **Fig. 1.**

Distribution and ecology: Vic (disjunct and isolated populations in southern areas west from Yarram, Sunday Island and Wilsons Promontory to Melbourne where there are numerous historic records including several eastern bayside suburbs (Brighton, Sandringham, Black Rock, Mentone, Dromana, Cheltenham, Frankston, Arthurs Seat), French Island, Point Lonsdale, Queenscliff, Anglesea, Otways, Portland district, Nelson, inland to the Grampians), **Tas** (rare at Cape Portland, several Bass Strait Islands including Flinders Island, Cape Barren Island, Clarke Island, Dover Island, Erith Island, Deal Island, Badger Island, King Island), **SA** (Yorke Peninsula, Mt Lofty Ranges, southern Flinders Ranges, south-east), **WA** (Esperance to Kalbarri). Grows in a range of moist to wet habitats from coastal and near coastal sites to hilly and high rainfall mountainous districts, including coastal scrubs, open forest, woodland and tall forest in well-drained sands and loams.

Flowering Period: June to September.

Recognition: Characterised by relatively large dark reddish-brown to blackish brown semi-nodding flowers which are well separated along the stem, broadly elliptical to ovate-elliptical lateral sepals, petals with a thick hairy dorsal ridge and a relatively large oblong labellum.

Variation: The tallest, most robust plants of *Urochilus sanguineus* occur in the Adelaide Hills where the type collection was made. Plants from other areas of reliable rainfall tend to be less robust and fewer flowered but retain the dark reddish brown to blackish flower colouration and relatively large oblong labellum. *Urochilus sanguineus* is generally recorded in the literature as extending inland into much drier habitats, even semi arid districts in some areas; however, these plants differ significantly in vegetative and floral features from typical *Urochilus sanguineus*. They also retain their features in cultivation. This taxon is described here as a new species.

2. *Urochilus arbusculus* D.L.Jones & C.J.French, sp. nov. With affinity to *Urochilus sanguineus* (D.L.Jones & M.A.Clem.) D.L.Jones & M.A.Clem. but differing by its slender habit, shorter stature (5-10 cm tall cf. 14-40 cm for *Urochilus sanguineus*), smaller cauline leaves (1.3-2.5 cm long cf. 2-6 cm for *U. sanguineus*), fewer (1-3 cf. 5-15 for *Urochilus sanguineus*) and smaller flowers of light red-brown colouration and smaller obovate labellum.

Type: Western Australia. Hyden - Lake King Road, 1.5 km N of Di Russo Road, 26 June 2017, C.J.French 11237 (holo PERTH).

Illustrations: Plate 189, Bates & Weber as *Pterostylis sanguinea* - Mallee form.

Description: *Rosette* carried above ground on a stalk 5-20 mm long; leaves 3-7; lamina ovate, 10-25 mm long, 5-10 mm wide; petioles 0-6 mm long. *Flowering plants* 3-15 cm tall, 1-3(-5)-flowered. *Cauline leaves* 5-8, spreading to obliquely erect, elliptic to ovate-lanceolate, 1.3-2.5 cm long, 3-6 mm wide, dark green; margins flat or recurved; apex acute to apiculate, reddish to orange. *Pedicels* 3-5 mm long. *Ovaries* obovoid, curved, 4-8 mm long, asymmetric, smooth or verrucose. *Flowers* not crowded, semi-nodding, 13-16 mm long, 8-12 mm wide, light reddish-brown (sometimes dark green to greenish brown) with translucent areas. *Dorsal sepal* 13-16 mm long, translucent white with light reddish-brown bands and suffusions, apex curved sharply forwards, bluntly apiculate. *Lateral sepals* deflexed, flat or shallowly concave with a sunken area beneath the labellum, elliptical to broadly elliptical, fused over most of their length, 10-14 mm long, 8-12 mm wide, light red brown with darker bands; margins incurved, free points triangular,



Urochilus arbusculus
Orchid.Rock,
July 1995

2-4 mm long, 2-3 mm apart, tips mucronate with incurved margins. *Petals* 9-12 mm long, c. 4 mm across at widest point, nearly straight; dorsal ridge strongly hirsute; anterior blade c. 3 mm wide, translucent with red-brown lines. *Labellum* claw ligulate, c. 2 mm long, c. 1.5 mm wide. *Labellum lamina* obovate, nearly straight with an upturned apex, 5-5.5 mm long, 2.5-3 mm wide, brown, dorsal surface and margins densely covered with beaded siliceous cells and short, stiff, bristle-like hairs c. 0.2-0.4 mm; basal lobe c. 1.4 mm deep; basal appendage erect, caudiform, c. 0.6 mm long, shortly hairy; labellum apex upturned, shortly bifid. *Callus* an obscure narrow central longitudinal ridge c. 0.8 mm wide, covered with beaded siliceous cells. *Column* erect and sharply incurved near the middle, 12-14 mm long, red brown; wings hatchet-shaped, 4.5-6 mm long; basal lobe narrow, c. 2.5 mm long, the inner surface with tangled white cilia; barrier trichomes clavoid, exerted below the apical lobe; apical lobe c. 0.4 mm long. *Column foot* c. 0.5-1 mm long. *Anther* c. 0.8 mm long, blunt. *Pollinia* oblong, curved, c. 1 mm long, yellow. *Stigma* deltate to broadly scutiform, 5-6 mm long, 5-6 mm wide, bifid, upper margins irregular. *Capsules* not seen. **Fig. 2.**

Distribution and ecology: Vic (north-west, Little Desert, Wyperfield National Park), SA (mainly areas inland from the coast although reaching the coast in drier parts, common on Eyre Peninsula), WA (mainly inland areas bounded by Ravensthorpe, Brookton, north of Merredin and Toolinna Cove, although reaching close to the coast in drier parts). Grows in mallee shrubland, stunted mallee, mallee-broombush communities and *Callitris* woodland in freely draining sands, calcareous sands, terra rossa over limestone and laterite. Plants are often found growing within the canopy of mallee eucalypts in dense layers of litter, even close to the trunks.

Flowering Period: June to late August (–early September).

Recognition: Characterised by its slender habit, short stature, small cauline leaves, one to three (occasionally to five) relatively small light red-brown flowers and a small obovate labellum.

Similar species: The new species has affinities with *Urochilus sanguineus* which is more robust, growing up to 40 cm tall with sturdy stems, larger leaves and more numerous, larger, dark reddish brown or blackish brown flowers (occasionally green or greenish brown) with broadly elliptic to ovate-elliptic laterals sepals and a larger oblong labellum. At the edges of the range of distribution of *Urochilus arbusculus*, there is some overlap with *Urochilus sanguineus*.

Urochilus arbusculus has some affinities with *Urochilus orbicularis* which is taller with more numerous, smaller green or brown flowers, with a smaller, circular synsepalum, shorter points on the lateral sepals and a coastal or near coastal distribution. There is some overlap in distribution between the two species in the drier parts of the south coast of Western Australia, but no intergrades.

Note: There is a population of plants close to the coast near the Eyre Bird Observatory, south of the Eyre Highway, with pale green to creamy brown and creamy white flowers, which, due to its remote location, has been rarely collected and requires further research to determine its taxonomic status.



Urochilus arbusculus
Dragon Rocks,
July 1994



Urochilus arbusculus
North of Ravensthorpe,
June 2017

Conservation status: Widespread, common and well conserved in nature reserves and national parks.

Etymology: From the Latin *arbusculus*, sapling, small tree, in reference to the preference of this species for growing in mallee communities and an oblique reference to its small dimensions when compared with *Urochilus sanguineus*.

Other specimens: Western Australia, Avon District: 17 km NW of Bruce Rock, 27 June 1984, *P. Armstrong 84/117* (PERTH 00560499); Jitarning farmland, Aug 1994, *D. Cook KKD 13* (PERTH 04278836); Near N boundary of Quairading Nature Reserve (Res. 16405), 1 July 1999, *G.J. Keighery & N. Gibson 7155 [a - ff]* (PERTH 06761631). Western Australia, Roe District: McCanns Rock, W of Karlgarin track along W side, 4 June 2000, *G. Brockman GBB 607* (PERTH 06001572); Lily McCarthy Rock, 28 August 1999, *G. Brockman GBB 477* (PERTH 05533678); Off Hassell Highway, 5 km S of Jerramungup, 22 June 1982, *M. Sherwood 600* (PERTH 045153580); Mount Ridley area, Aug 1987, *A. Popperwell* (PERTH 00794295); South Ironcap, 28 km ENE of Varley, 18 August 2000, *G. Brockman, GBB 653* (PERTH 06000401); SW slope of Mount Ragged, 15 August 1980, *A.S. George 16046* (PERTH 05861055).

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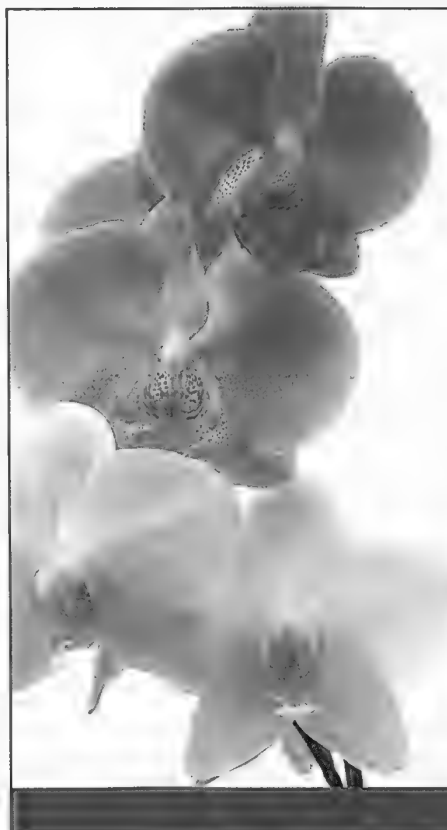
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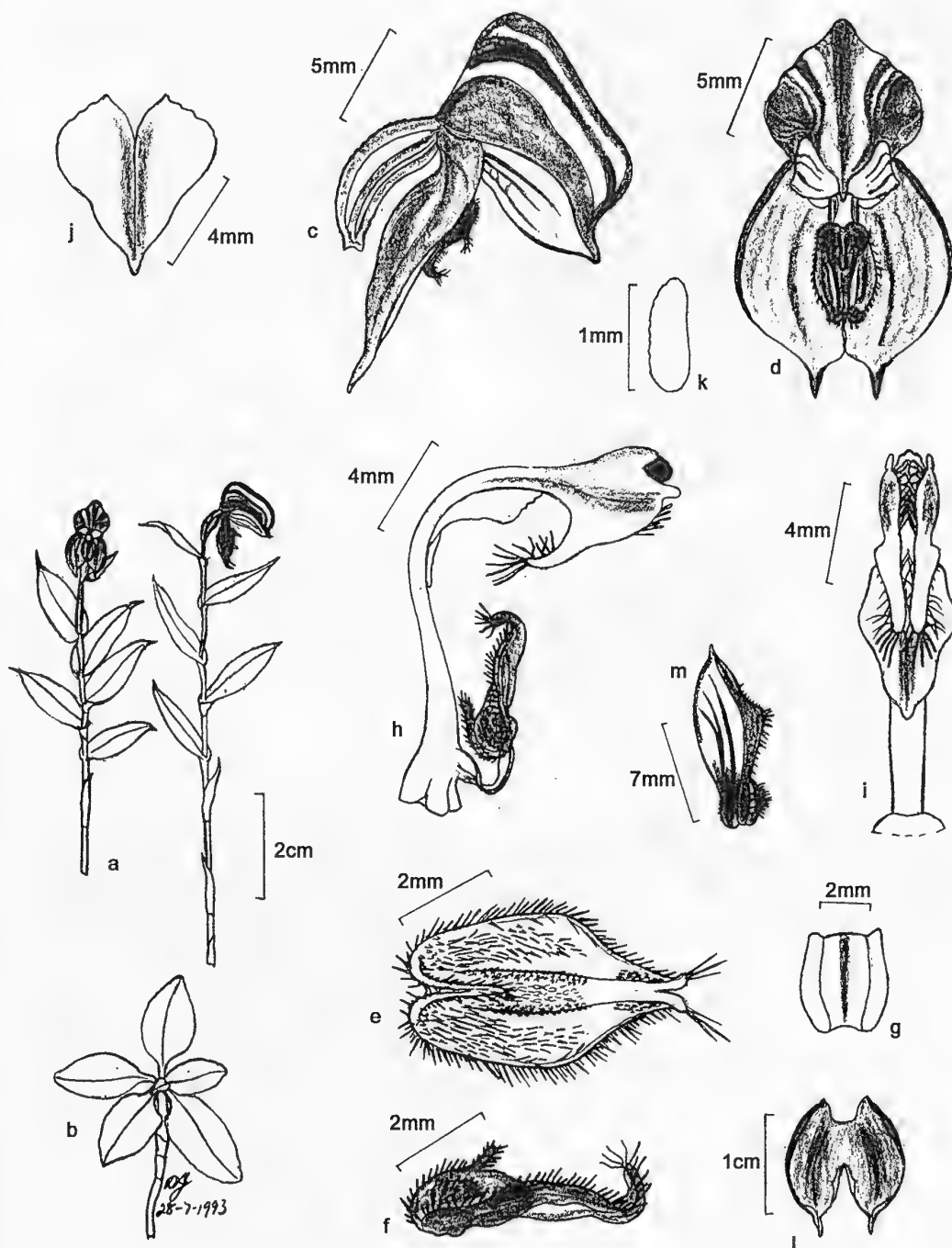
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***Urochilus arbusculus*, Mt Olinthus, Eyre Peninsula, SA, R.Bates 33593. (Fig. 2.)**

a. flowering plants; b. rosette; c. flower from side; d. flower from front; e. labellum from above; f. labellum from side; g. labellum hinge; h. column and labellum from side; i. column from front; j. stigma; k. pollinium; l. synsepalum; m. petal.
© D.L.Jones 28 July 1993.

Characterisation of *Corunastylis nudiscapa*, *Corunastylis densa* (Orchidaceae: Prasophyllinae) and the description of *Corunastylis leptochila*, a related new species

by David L. Jones

Abstract

Corunastylis nudiscapa and *Corunastylis densa* are characterised with full descriptions and *Corunastylis leptochila* from Victoria is described as new.

Key Words

Orchidaceae, *Corunastylis nudiscapa*, *Corunastylis densa*, *Corunastylis leptochila*, new species, Victoria, New South Wales, Tasmania, Australian flora.

Introduction

Prasophyllum nudiscapum J.D.Hook. was named by Joseph Dalton Hooker in *Flora Tasmaniae* in 1858 with a supporting diagnosis that was pertinent and generous for that era (Hooker 1858). The type collection consists of three specimens collected in south-eastern Tasmania (Clements 1989, Wapstra 2008). Although originally described in *Prasophyllum*, the species was later transferred to *Genoplesium* (Jones & Clements 1989) and finally to *Corunastylis* (Jones *et al.* 2002).

Until its rediscovery in 1988 (Bonham 1988), the occurrence of *C. nudiscapa* in Tasmania was based solely on the type collection and a single specimen collected in 1852 from Oyster Cove. Prior to its rediscovery, the absence of further collections from Tasmania resulted in speculation about its status and distribution. Hooker himself linked the species to a specimen from Victoria, Backhouse and Jeanes (1995) applied the name *Genoplesium nudiscapum* to plants from montane and subalpine areas in the Eastern Highlands of Victoria, and Jones (1998) provides a distribution for the species that includes New South Wales and Victoria. Examination of a photograph of the type specimens shows the flowers to be well past their best and in an early stage of fruiting, therefore offering limited features for identification, although an accompanying sketch of the flowers is useful.

Hooker's diagnosis includes two important features which help to identify the species, viz. "*base of lateral sepals connate but not humped*", which separates it from the many species of *Corunastylis* that have a strongly humped base on the lateral

sepals, and the very significant "*labellum margins erose*". Of equal significance, he mentions in his notes an important feature of the leaf - "*It is closely allied and very similar indeed to *P. brachystachyum* but distinguishable at once by the bract of the scape being placed close under the spike*". This feature, whereby the free lamina of the leaf is carried very close to the basal flower in the spike or often protruding between the lower flowers, can be seen in the type specimens and is shared by two other species on the mainland, *C. densa* (Fitzg.) D.L.Jones & M.A.Clem., and a species from south-western Victoria collected by Paul Barnett in 1993.

A specimen of *C. nudiscapa*, sent by Hans and Annie Wapstra of Tasmania in 2009, enabled me to complete a detailed description of the species and make a comparison between all three taxa. This paper aims to characterise *C. nudiscapa* and *C. densa* by providing full descriptions of the species, emphasise their distinct features and describe the Victorian taxon as new.

Taxonomy

1. *Corunastylis nudiscapa* (Hook.f.) D.L.Jones & M.A.Clem., *Orchadian* 13(10): 461 (2002); *Prasophyllum nudiscapum* Hook.f., *Fl. Tasman.* 2: 13 (1858); *Genoplesium nudiscapum* (Hook.f.) D.L.Jones & M.A.Clem., *Lindleyana* 4(3): 143 (1989).

Type: Tasmania. Hill E of Mt Wellington, on sandy soil, 1840, J.D.Hooker (holo K, photol).

Description: Terrestrial tuberous herb. Leaf slender, terete, 6-8 cm long, c. 1.5 mm wide, dull brownish; free lamina subulate, 6-12 mm long, c. 1.5 mm wide, projecting through the flowers. Spike 8-15 mm long, bearing 5-20 densely crowded flowers. Flowers semi-nodding, 4.5-5 mm long, 3.5-4 mm across, reddish brown to purplish brown. Fertile bracts closely sheathing to the ovary, ovate-lanceolate, c. 4 mm long, c. 2 mm wide, apex acuminate. Ovary sessile, linear-obovate, asymmetric, c. 2.5 mm long, brown, curved, smooth. Dorsal sepal incurved, ovate-lanceolate, c. 4 mm long, 2-2.2 mm wide, cucullate, apex mucronate. Lateral sepals porrect to obliquely decurved, widely divergent, asymmetrically oblong-lanceolate, 4.6-5 mm long, 1.2-1.4 mm wide, weakly gibbous at the base, distally involute, with a

linear-filiform, whitish, terminal gland. *Petals* porrect to weakly spreading, narrowly ovate-lanceolate, c. 2.5 mm long, c. 1 mm wide, incurved, anterior margin minutely denticulate, apex acute, with a globose white apical gland. *Labellum* attached by a narrow basal claw; *lamina* narrowly oblong-obovate in outline when flattened, 4-2.8 mm long, 1-1.2 mm wide, nearly flat, shallowly curved near the apex, reddish brown, thick, fleshy, medial and distal margins irregularly denticulate to shortly erose, the papillae extending onto the adjacent marginal surface of the lamina, apex subacute; *Callus* c. 2 mm long, c. 0.6 mm wide, dark-reddish brown to blackish brown, colluviate, thick, fleshy, shallowly channelled proximally. *Column* dark reddish brown, c. 1.5 mm long, c. 1.2 mm across; column foot deflexed, c. 0.6 mm long, c. 0.4 mm wide, apex incurved. *Column wings* shallowly lobed, the lobes divergent; posterior lobe ovate-cuneate, margins irregular; anterior lobe ovate-cuneate, margins entire. *Anther* ovate, c. 1 mm long, with a filiform rostrum 0.3-0.4 mm long. *Stigma* ovate, c. 0.3 mm long, c. 0.3 mm wide, sunken. *Pollinarium* c. 1 mm long; *Pollinia* c. 0.8 mm long, yellow, coarsely granular; caudicle vestigial; viscidium c. 0.15 mm across. *Capsules* not seen. **Fig. 1.**

Distribution and Ecology: Southern Tasmania (South Hobart, Oyster Cove). Grows among shrubs on north-facing open dry eucalypt woodland developed on mudstone. Altitude: c. 100 - 275 m.

Flowering period: March and April, October.

Notes: Until 2008, the occurrence of this species in Tasmania was based on the type collection consisting of three specimens, and the collection of a single specimen from Oyster Cove by Joseph Milligan on 4 October 1852. Some 155 years later, about five fruiting plants of the species were found by Kevin Bonham from a site near the Waterworks in South Hobart. A visit by him in April 2008 found five plants in flower and later searches of the locality revealed some 49 plants scattered over about three hectares (Bonham 2008).

Corunastylis nudiscapa,
Tasmania
(photo: Peter Farlie)



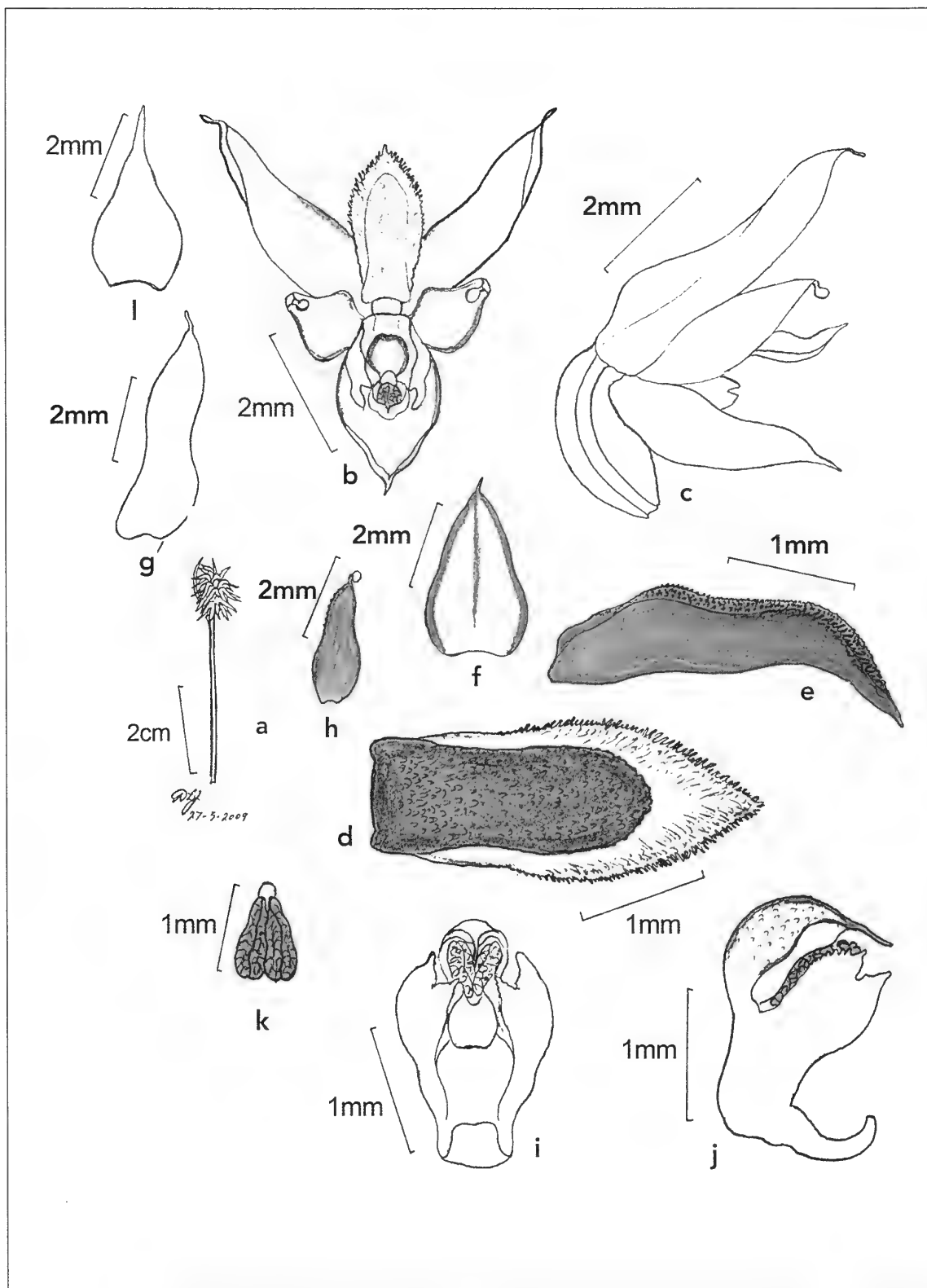
Corunastylis nudiscapa,
Tasmania
(photo: Peter Farlie)



Recognition: Characterised by a combination of characters including the free lamina of the leaf projecting close to or through the flower spike, densely crowded, semi-nodding, reddish brown to purplish brown flowers, broad lateral sepals, white globose gland on the petal apex and a narrow, oblong-obovate labellum which has strongly denticulate to shortly erose margins, the denticulations/papillae extending onto the distal surface of the labellum lamina, the colluviate callus extending about three-quarters of the way to the labellum apex.

Similar species: *Corunastylis leptochila*, which is endemic to south-western Victoria is very similar in general appearance but can be readily distinguished by its narrower, narrowly elliptical labellum with a smooth upper surface and entire or slightly irregular margins, the strongly colluviate and transversely wrinkled callus extending nearly to the labellum apex. *Corunastylis densa* is also generally similar to *C. nudiscapa* but with darker purple flowers and a broader obovate labellum with denticulate margins.

Conservation status: Endangered.



***Corunastylis nudiscapa*, South Hobart, Tas, Hans & Annie Wapstra. (Fig. 1.)**

a. flowering plant; b. flower from front; c. flower from side; d. labellum from above, flattened; e. labellum from side; f. dorsal sepal; g. lateral sepal; h. petal; i. column from front; j. column from side; k. pollinarium; l. floral bract.

Drawn © David L. Jones 27 March 2009.

2. *Corunastylis leptochila* D.L.Jones, *sp. nov.* With affinity to *Corunastylis nudiscapa* J.D.Hook. but differing by its smaller, narrower, narrowly-elliptical labellum with entire or slightly irregular margins (narrowly oblong-ovovate in *C. nudiscapa* with strongly denticulate to erose margins) and smooth distal labellum surface (denticulate/papillate in *C. nudiscapa*), wrinkled, strongly colluviate callus extending nearly to the labellum apex (colluviate callus in *C. nudiscapa* extending about three-quarters of the way to the labellum apex); also with *C. densa* (Fitzg.) D.L.Jones & M.A.Clem. which has a wider (to 1.3 mm wide) obovate labellum with denticulate margins.

Type: Victoria, c. 3 km east along Lavers Hill – Cobden Road, 28 November 1992, D.L.Jones 10861, P.Barnett & G.Beilby (holo CANB 678204).

Illustrations: Page 199, Backhouse and Jeanes (1995); page 281 Jeanes & Backhouse (2006), both as *Genoplesium nudiscapum*.

Description: Terrestrial tuberous herb. Leaf slender, terete, 6–8 cm long, c. 1.3 mm wide, dull brownish; free lamina subulate, 6–10 mm long, c. 1 mm wide, projecting through the flowers. Spike 8–15 mm long, bearing 12–30 densely crowded flowers. Flowers nodding, 4–4.5 mm long, c. 3.5 mm across, reddish brown to purple. Fertile bracts closely sheathing to the ovary, ovate to ovate-lanceolate, c. 3.5 mm long, c. 2 mm wide, apex mucronate. Ovary sessile, linear-obovate, asymmetric, c. 2 mm long, reddish brown, shallowly curved, smooth. Dorsal sepal incurved, ovate-lanceolate, c. 2.3 mm long, c. 1.3 mm wide, cucullate, distal margins incurved, apex mucronate. Lateral sepals obliquely decurved, widely divergent, asymmetrically oblong, 4–4.5 mm long, 1–1.2 mm wide, weakly gibbous and verrucose at the base, distally involute, with a linear, vestigial whitish, terminal gland. Petals porrect to weakly incurved, narrowly elliptic, c. 2.5 mm long, c. 0.7 mm wide, apex acute, with a globose white apical gland. Labellum attached by a narrow basal claw; lamina narrowly elliptical in outline when flattened, c. 2 mm long, 0.6–0.8 mm wide, nearly flat, shallowly downcurved at the apex, reddish brown to purplish, thick just above the base, fleshy, distal surface smooth, margins entire or slightly irregular, apex subacute; Callus c. 1.6–1.8 mm long, c. 0.6 mm wide, extending nearly to the labellum apex, dark-reddish brown, strongly colluviate with some transverse wrinkles, thick, fleshy, shallowly channelled proximally. Column pale at the base, distally reddish brown, c. 1.7 mm long, c. 1 mm across; Column foot deflexed, c. 0.8 mm long, c. 0.4 mm wide, incurved. Column wings shallowly lobed, the lobes divergent; posterior lobe ovate-cuneate, margins entire; anterior lobe ovate, margins entire. Anther ovate, c. 1 mm long, with a filiform rostrum 0.1–0.2 mm long. Stigma ovate to quadrate, c. 0.4 mm long, c. 0.3 mm wide, sunken. Pollinarium c. 1.2 mm long; Pollinia c. 0.9 mm long, yellow, coarsely granular; caudicle vestigial; viscidium c. 0.15 mm across. Capsules not seen. **Fig. 2.**



Corunastylis leptochila,
Otways, Victoria
(photo: Colin & Mischa Rowan)



Corunastylis leptochila,
Otways, Victoria
(photo: Colin & Mischa Rowan)

Distribution and Ecology: Victoria, known from a single locality in the Otway Ranges in the south-west. Grows among sedges, forbs and low shrubs in open forest dominated by *Eucalyptus baxteri* in moisture-retentive brown clay loam.

Flowering period: November–December. Alt. c. 450 m.

Recognition: Characterised by a combination of characters including the free lamina of the leaf projecting close to or through the flower spike, densely crowded, semi-nodding, reddish brown to purple flowers, broad lateral sepals, white globose gland on the petal apex and a narrowly elliptical labellum with a smooth upper surface and entire or slightly irregular margins, the strongly colluviate callus extending nearly to the labellum apex, with some transverse wrinkles.

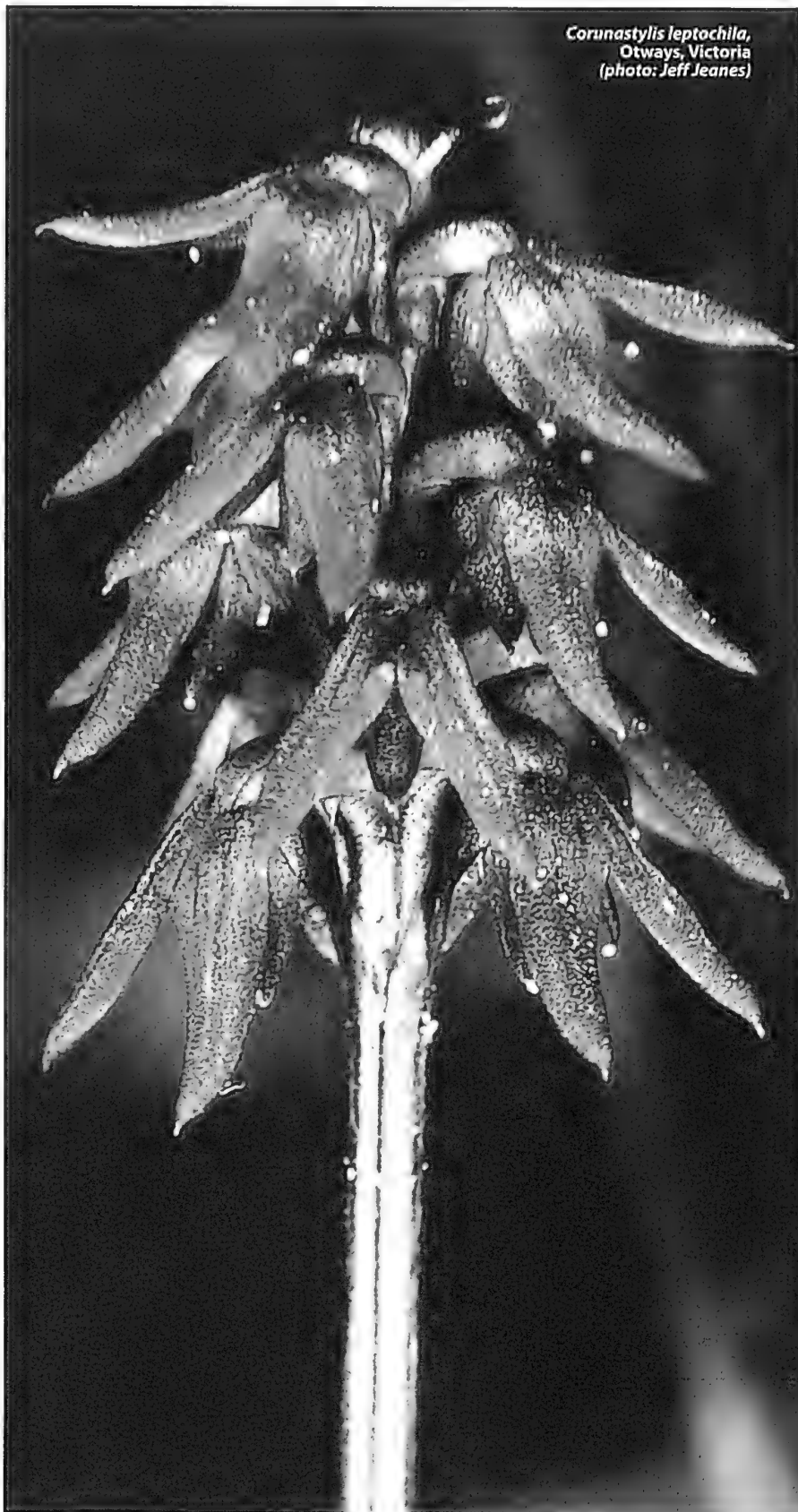
Similar species: *Corunastylis nudiscapa*, which is endemic to south-eastern Tasmania is very similar in general appearance but can be readily distinguished by its wider narrowly oblong-obovate labellum which has strongly denticulate to shortly erose margins, the denticulations/papillae extending onto the marginal surface of the labellum lamina. *Corunastylis densa* is also generally similar to the new species but with darker purple flowers and a broader obovate labellum with denticulate margins.

Notes: The habitat where this species grows thickens considerably in the first year after a fire. Flowering is enhanced by summer fires.

Etymology: *leptochila*, from the Greek *leptos*, slender, *cheilos*, lip, referring to the narrow labellum of this species, one of the narrowest in the genus.

Conservation status: Endangered.

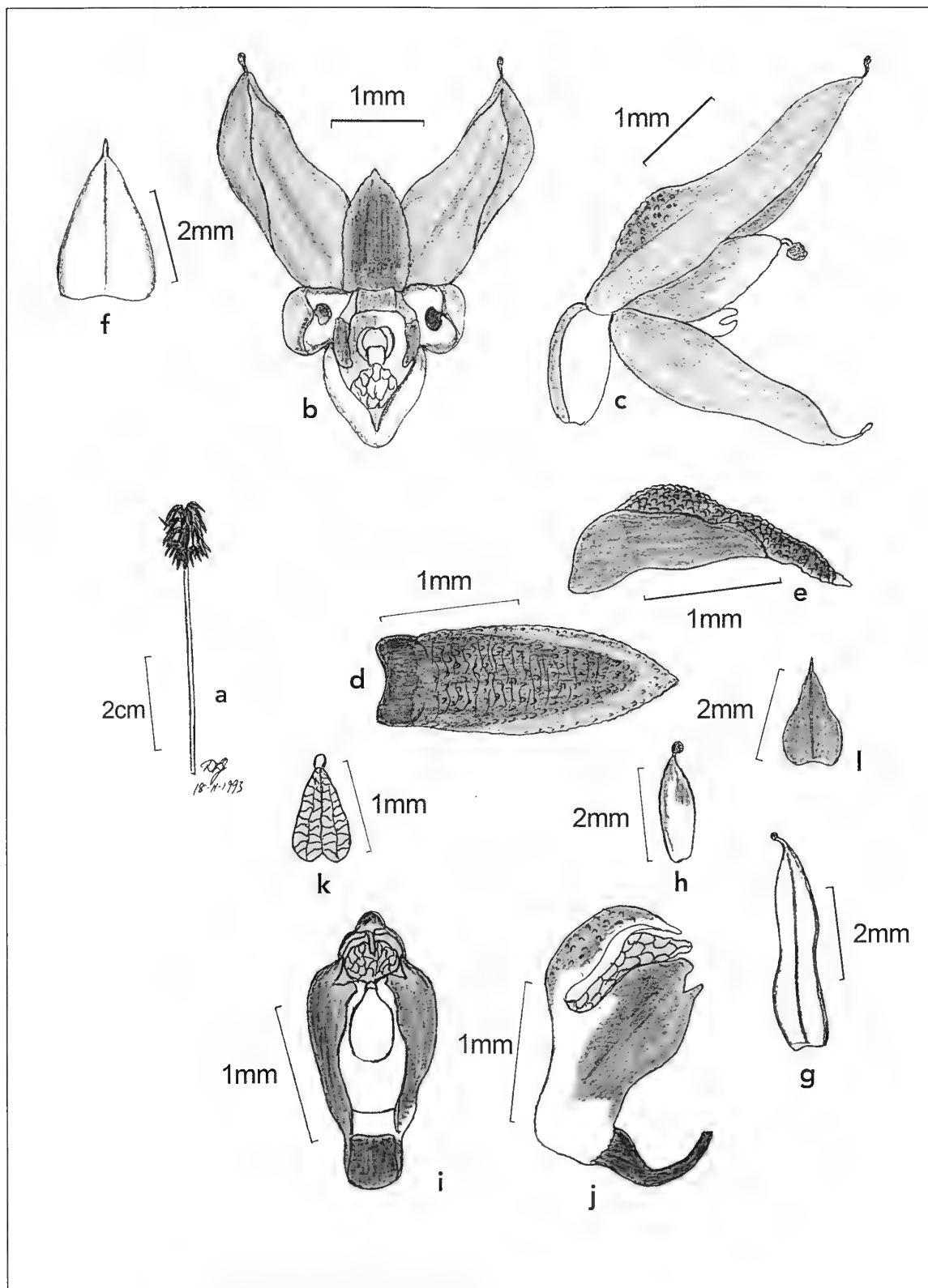
Corunastylis leptochila,
Otways, Victoria
(photo: Jeff Jeanes)



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***Corunastylis leptochila*, Lavers Hill Road, Vic, P. Barnett (DLJ 12641). (Fig. 2.)**

a. flowering plant; b. flower from front; c. flower from side; d. labellum from above, flattened; e. labellum from side; f. dorsal sepal; g. lateral sepal; h. petal; i. column from front; j. column from side; k. pollinarium; l. floral bract.

Drawn © David L. Jones 18 November 1993.

3. *Corunastylis densa* (Fitzg.) D.L.Jones & M.A.Clem., *Orchadian* 15(1): 37 (2005); *Prasophyllum densum* Fitzg., *J. Bot.* 23: 135 (1885). TYPE: New South Wales. Mount Wilson, Jan., *E.Meriwether* (lecto Fitzgerald's plate, *fide* Jones & Clements 1989).

Prasophyllum ansatum Fitzg., *J. Bot.* 23: 135 (1885). TYPE: New South Wales. Mount Wilson, Jan., *E.Meriwether* (holo BM; iso BM).

Prasophyllum longisepalum Fitzg., *J. Bot.* 23: 136 (1885). TYPE: New South Wales. Mount Wilson, Blue Mountains, March [24 June 1884 on sheet], *R.D.Fitzgerald* (holo BM; iso BM).

Prasophyllum longisepalum Nubling, *Austral. Orch. Rev.* 5: 59 (1940), *nom. nud.*

Prasophyllum densiflorum Nubling, *Austral. Orch. Rev.* 5: 59 (1940), *nom. illeg.* TYPE: New South Wales. Near Waterfall, the top track to Flat Rock Crossing, *E.Nubling* (holo NSW, not found).

Prasophyllum nichollsianum Rupp, *Victorian Naturalist* 59: 123 (1942). TYPE: New South Wales. Loftus, near National Park, May 1929, *E.Nubling* (holo NSW!).

Prasophyllum albiglans Rupp, *Contr. New South Wales Natl. Herb.* 1: 318, fig. B,4-7 (1951). TYPE: New South Wales. Asquith, March 1949, *I.Bowden* (holo NSW!).

Description: Terrestrial tuberous herb. Leaf slender, terete, 6-12 cm long, c. 1.5 mm wide, green to yellowish; free lamina subulate, 10-18 mm long, c. 1 mm wide, projecting through the lower flowers. Spike 8-15 mm long, bearing 12-30 densely crowded flowers. Flowers nodding, 4-4.5 mm long, 2.5-3 mm across, purplish brown to dark purple. Fertile bracts closely sheathing to the ovary, ovate-lanceolate, c. 3.5 mm long, c. 2 mm wide, apex mucronate. Ovary sessile, linear-obovate, asymmetric, c. 2.5 mm long, green to yellowish, shallowly curved, smooth. Dorsal sepal incurved, ovate-lanceolate, c. 3 mm long, c. 2 mm wide, cucullate, distal margins incurved, apex mucronate, often with a small globose gland. Lateral sepals obliquely decurved, divergent, asymmetrically oblong to oblong-lanceolate, 4-4.5 mm long, 1.2-1.6 mm wide, weakly gibbous at the base, distally involute, with a linear to globose whitish terminal gland. Petals porrect to weakly incurved, ovate, c. 2.5 mm long, c. 1.3 mm wide, apex subacute, with a globose white to orange apical gland. Labellum attached by a narrow basal claw; lamina broadly obovate in outline when flattened, 2-2.5 mm long, c. 1.3 mm wide, nearly flat but thick and fleshy, shallowly downcurved at the apex, purplish brown to dark purple, margins denticulate, apex subacute to obtuse; Callus c. 1.8-2 mm long, c. 0.8 mm wide, extending nearly to the labellum apex, dark purple, strongly colluviate, thick, fleshy, shallowly channelled and paler proximally. Column pale at the base, distally purplish, c. 2 mm long, c. 1.3 mm across; Column foot deflexed, c. 0.8 mm long, c. 0.5 mm wide, incurved. Column wings shallowly lobed, the lobes hardly divergent; posterior lobe cuneate, margins entire; anterior lobe cuneate, margins denticulate. Anther ovate, c. 1 mm long, with a filiform rostrum 0.2-0.3 mm long. Stigma ovate to quadrate, c. 0.6 mm long, c. 0.4 mm wide, sunken. Pollinarium c. 1.2 mm long; Pollinia c. 0.9 mm long, yellow, coarsely granular; caudicle vestigial; viscidium c. 0.15 mm across. Capsules 3-3.5 mm long, c. 1.5 mm wide, green to yellowish.

Distribution and ecology: Widely distributed in NSW from Point Lookout to Mt Wilson in the Blue Mountains, some Sydney suburbs (Lane Cove, Asquith, Loftus, Waterfall), Tinderry Mountains near Michelago and Nowra in the south-east. Grows among shrubs in open forest, woodland, heathy forest and in shallow soils and moss over rock sheets and rock plates.



Corunastylis densa,
Blue Mountains, NSW
(photo: Lachlan Copeland)



Corunastylis densa,
Ku-ring-gai Chase, NSW
(photo: Lachlan Copeland)

Recognition: Characterised by a combination of characters including the free lamina of the leaf projecting close to or through the flower spike, densely crowded, semi-nodding, reddish brown to dark purple flowers, very broad lateral sepals with a shallow basal hump, sepals usually with a linear to globose apical gland, white to orange globose gland on the petal apex and a broadly obovate labellum with a smooth upper surface and denticulate margins, the colluviate callus extending nearly to the labellum apex.

Similar species: *Corunastylis nudiscapa*, which is endemic to south-eastern Tasmania is similar in general appearance but can be readily distinguished by its narrowly oblong-obovate labellum which has strongly denticulate to shortly erose margins, the denticulations/papillae extending onto the marginal surface of the labellum lamina. *Corunastylis leptochila*, which is endemic to south-western Victoria is also similar in general appearance but can be readily distinguished by its narrowly elliptical labellum with a smooth upper surface and entire or slightly irregular margins and a strongly colluviate and transversely wrinkled callus.

Notes: *Corunastylis densa* shows some variation but the treatment by Fitzgerald where he describes three species from Mt Wilson is puzzling. Examination of his plates shows variation in colour and arrangement of the floral segments but the important morphological features are all consistent with *Corunastylis densa*.

Plants attributed to this species from montane and subalpine areas around the headwaters of the Moroka River and neighbouring streams in the Eastern Highlands of Victoria warrant further study (for illustration and notes see page 199, Backhouse & Jeanes (1995), page 281 Jeanes & Backhouse 2006).

Conservation status: Relatively widespread and often locally common.

Etymology: The Latin *densus* (dense, crowded together), in reference to the crowded flowers.



Corunastylis densa,
Nowra, NSW
(photo: Alan Stephenson)

Key to Species

- | | |
|--|----------------------|
| 1. Labellum narrowly elliptical in outline when flattened, 0.6-0.8 mm wide, margins entire or slightly irregular..... | <i>C. leptochila</i> |
| 1a. Labellum narrowly to broadly obovate in outline when flattened, 1-1.3 mm wide, margins denticulate or strongly erose | 2. |
| 2. Labellum broadly obovate in outline when flattened, margins denticulate, distal surface of lamina smooth | <i>C. densa</i> |
| 2a. Labellum narrowly obovate in outline when flattened, margins strongly erose, distal surface of lamina papillate | <i>C. nudiscapa</i> |

Acknowledgements

Special thanks to Hans and Annie Wapstra for supplying the specimen of *Corunastylis nudiscapa* and discussions about its features and habitat, Mark Wapstra for sharing his research into the history of the species, habitat details and much more, and Peter Fehre for photos of *Corunastylis nudiscapa*. Also to the late Paul Barnett for bringing *Corunastylis leptochila* to my attention, Colin & Mischa Powell and Jeff Jeanes for photos of that species, Gary Backhouse for assistance in locating photographs and Geoff Beilby for help in the field. Also to Lachlan Copeland for photos of *Corunastylis densa*, Mark Clements for discussions about the types, Emma Toms for help with specimens, Alan Stephenson for photos from Nowra, Brendan Lepschii for facilitating access to specimens at CANB and Barbara Jones for reading the manuscript.

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Erythrorchis cassythoides, the Bootlace Orchid

by Royal Rea



*Erythrorchis
cassythoides*

Rare native orchids can be found in the most suburban of habitats. For the past three years, I have noticed a rare native orchid growing beside a footpath that I walk my daughter to her primary school. Some people may argue it isn't that uncommon, but for ease of access to view it, it doesn't get better.

I first noticed the saprophytic *Erythrorchis cassythoides*, (Black Bootlace or Climbing Orchid) after a large rain event, and it was just opening the first flowers. It is currently growing up the base of a brush box tree, presumably from a rotting underground wood nearby. The first time I saw this orchid in flower was about 1994 at my late Uncle's Sawmill in Fernvale, growing in rotting sawdust.

It is growing in about, an acre of remnant, or left over bush, on steep hillside, first from an old pineapple farm and more lately (the last 14 years) a suburban subdivision once the farm was sold. Other native orchids identified in this small island of bush in suburbia are, *Cymbidium madidum*, *Peristeranthus hillii*, *Geodorum densiflorum* and *Dockrillia teretifolia*. So these small areas of uncleared bush can be important for quite scarce orchids.

I have kept a watchful eye over it, during this time. Some of its climbing stems have grown about 15 metres up the trunk of the brush box, only to be partially eaten by a ring-tailed possum who lives in the trees, to die and begin growing up the trunk again.

Last winter and spring of 2016 was its best flowering show yet, until a little two footed possum picked some flowers to give to hopefully their teacher.

I have noticed new climbing stems growing this March 2017, so I hope late winter/spring will once again, prove to be a good flowering for *Erythrorchis cassythoides*, provided it is left alone by sticky fingers and or possums. ■

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cassythoides*



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GROWING ORCHIDS FROM SEED

by Philip Seaton and Margaret Ramsay

Written for the amateur and the professional without access to sophisticated laboratory equipment and chemicals, 'Growing Orchids from Seed' contains all you need to know to be an expert!

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ORCHID SPECIES OF THE SHOALHAVEN: NSW Australia

by Alan W. Stephenson

Alan Stephenson lives in Nowra and is well placed to give the first botanical treatment of the native orchids of the Shoalhaven region. He has extended the distribution ranges of a number of uncommon and rare species, as well as discovering new taxa. This 68 page book is packed with both information and superb photography, almost exclusively taken by the author. All of the recorded orchid species native to the region are included and illustrated.

The introductory chapters discuss the area covered by this book, the structure of the orchid plants, their natural habitats, parts of an orchid flower, orchid structure and the pollination of orchids. This is followed by the main section of the book that alphabetically lists and

discusses each species, with information such as Common Names, Recent Synonyms, Flowering Time in the wild, plus a brief description of the plant, flowers and preferred habitat. There are many terrestrial species fully covered as well as a number of epiphytic and lithophytic genera that are found in the area.

The quality of the printing and colour reproductions are sparkling. This is a wonderful field guide that will aid even the most novice naturalist or native orchid enthusiast and confidently assist them in identifying examples they encounter in the field. It represents excellent value, as it also covers many species found naturally along the East Coast of New South Wales.

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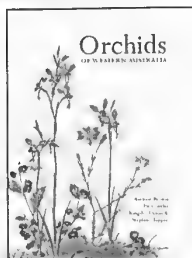
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ORCHIDS OF WESTERN AUSTRALIA

by Andrew Brown, Pat Dundas, Kingsley Dixon & Stephen Hopper

Written by three of Western Australia's most prominent orchidologists and featuring over 200 full-page, colour illustrations by renowned botanical artist Pat Dundas, *Orchids of Western Australia* is the first modern text cataloguing all 409 known species.

This comprehensive resource for hardened enthusiasts and initiates alike features a wealth of information in a single volume - from a detailed introduction to WA orchids to information on each species, including who named them, where they were first collected, their habitat, distribution, flowering period, size and distinguishing features. This book is the culmination of decades of work by WA's foremost experts, each dedicated to the conservation of one of the world's most important regional orchid floras.



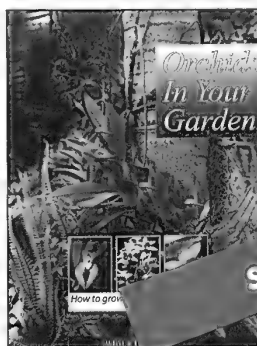
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Robert Friend draws on a lifetime's experience with orchids to explain how to choose the right orchid for your climate and how to landscape orchids in different types of gardens. Ranging from tropical to cool climate areas, from large acreages to small courtyard gardens, almost every backyard can enjoy the best of one of nature's wonders.

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THE ALLURE OF ORCHIDS

by Mark A. Clements

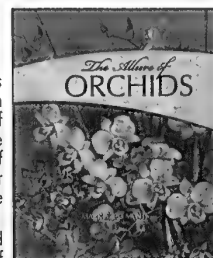
From 1788 when First Fleet artist George Raper painted *Diuris punctata*, the botanical world has been fascinated by Australian orchids. Hundreds of orchid images from the National Library of Australia's collection, with words by Mark Clements from the Australian National Herbarium in Canberra, make *The Allure of Orchids* a must-read for lovers of flowers, original paintings and our indigenous orchids. Many of these unique botanical illustrations are being showcased to a wider audience for the very first time.

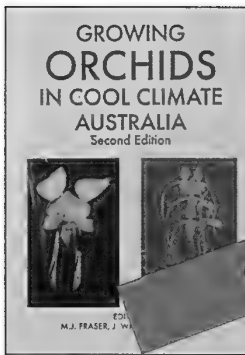
The Allure of Orchids features an essay by internationally recognised orchid expert Mark Clements, accompanied by a portfolio of illustrations, both historical and modern, of this alluring species. In it you will find works by around 25 artists, including the extraordinarily detailed lithographs of early botanical illustrator Ferdinand Bower, Ellis Rowan's beautiful paintings, the delicate watercolours of Margaret Cochrane Scott, and many more. *The Allure of Orchids* is divided into two parts: Terrestrial or ground orchids and Epiphytic or tree dwelling species. Clements says, "These illustrations can be enjoyed simply as works of art and part of our rich and colourful Australian illustrative heritage. But, significantly, they are also part of the scientific record of this country, particularly during the early exploration of the continent."

Interestingly, a lot of the old and traditional Latin botanical names have been used in this work. The author makes a significant number of anecdotal notes and comments throughout the book, to keep the reader fully informed. It is a "must have" book for those interested in Australian orchids and historical botanical art.

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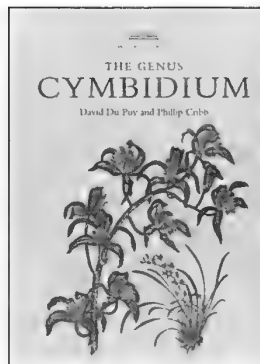
Editors: Fraser, M.J., Wright, J.,
& Ferris, W. 2013

This is an updated book and includes much new information. Members of the Orchid Society of Australia will find this book covers topics such as: Orchids, Structures for growing orchids, Propagation media, pests and diseases, Orchid nomenclature, Orchid Classification and of course how to grow many types of orchids in cool climate regions of Australia. The main section covers individual cultivation of the most popular types of

orchids that we all fall in love with at the beginning... *Cymbidium*, *Cattleya*, *Oncidium*, *Paphiopedilum*, *Masdevallia*, *Stanhopea*... and much more. An invaluable reference for novice growers and those with a passion for this delightful plant family.

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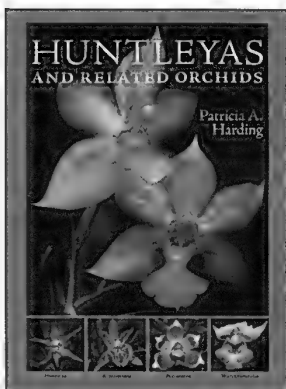
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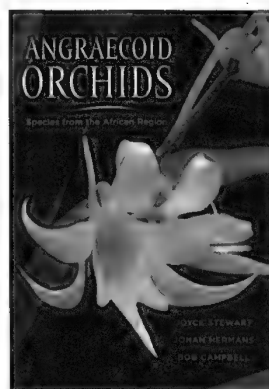
by Patricia A. Harding

Revered by avid orchid collectors for its delightful, star-shaped flowers, *Huntleya* is a small group of orchids found low in the forest. *Huntleya* is a small orchid genus that includes fourteen species. They occur in wet cloud forests at medium altitudes of Guatemala, Costa Rica, South America down to Bolivia. The type species *Huntleya meleagris* also occurs in Trinidad. Besides their striking colours — from deep blue to waxy red, royal purple to almost black — flowers of this group are known for their distinctive shapes, patterns, and textures. As appealing as these lovely tropical orchids are, their identification has been

confused since the first species was described in the mid-1800s. Recent DNA studies have led to a clearer understanding of relationships and, as a result of this clarity, it is now possible to sort out the taxonomic problems and identify the characteristics that set species apart. In this first book devoted to the *Huntleya* alliance, author Patricia Harding presents evidence from the scientific literature, other growers, and her own experience that will enable orchid enthusiasts everywhere to identify their plants and grow them successfully. Patricia A. Harding is an accredited American Orchid Society judge who has been growing and photographing orchids for three decades.

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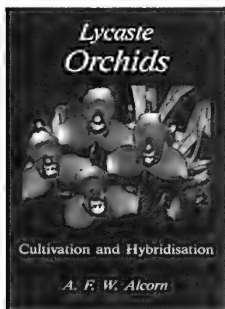
by Joyce Stewart,
Johan Hermans,
and Bob Campbell

These so-called 'Jewels of Africa' with their sparkling flowers, distinctive growth habit and floriferous nature are much prized and this account, the first to include the Angraecoid orchids of both Africa and Madagascar, is long awaited. It brings together, in a single volume, descriptions of all 690 species in this intriguing group of orchids and will be the essential reference for all Angraecoid orchid enthusiasts for years to come. Including such horticulturally

important genera as *Angraecum*, *Aeranthus*, *Aerangis* and *Jumellea*. Stewart, Herman and Campbell have all spent time in various parts of eastern and southern Africa and precise ecological information relating to habitat, altitude preferences and flowering season of individual plants will be particularly helpful to growers. The diagnostic features of each genus are illustrated and over half the species are accompanied by exquisite photographs taken in both wild habitats and in cultivation.

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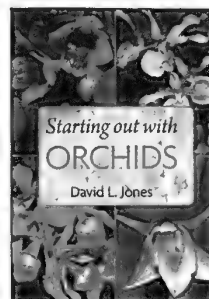
by A.F.W. Alcorn

Lycaste orchids are easy to grow, and they produce flowers that range from the beautiful to the bizarre. No book previously has provided detailed cultural requirements of the Lycaste, and this book should fill that gap, and encourage new growers to take up the cultivation of this beautiful genus. A section on hybridising contains valuable information on inheritance and genetics that will benefit any hybridiser, not just the grower of Lycastes, as well as helpful hints on how to avoid pitfalls in your hybridising program. Michael Hallett, a friend of

Fred Alcorn for a number of years, co-wrote this book with Fred and has completed it posthumously. He has a background in genetics, research and botany, and a passion for plants, especially orchids.

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STARTING OUT WITH ORCHIDS

by David L. Jones

David Jones is arguably one of Australia's most prolific, precise and respected botanical and horticultural authors. The book is divided in two parts. Part One begins with the cultivation chapters, covering Easy Orchids for Beginners, General Cultivation Requirements, Growing Epiphytic Orchids, Growing Terrestrial Orchids, Orchid Pests and Diseases, Housing Your Orchids and Propagating Your Orchids. The information contained within these pages alone is required reading for all beginners through to experienced orchid growers. The text is very easy to read and understand with numerous sound cultivation tips and treatments discussed. There are many excellent and clear line illustrations that help describe terms or highlight diagnostic features. There are over 250 colour photographs.

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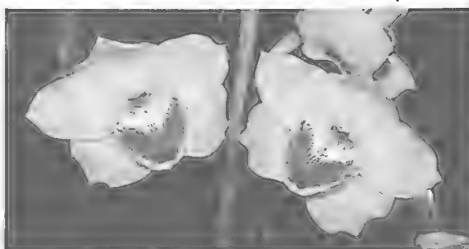
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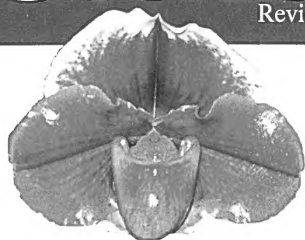
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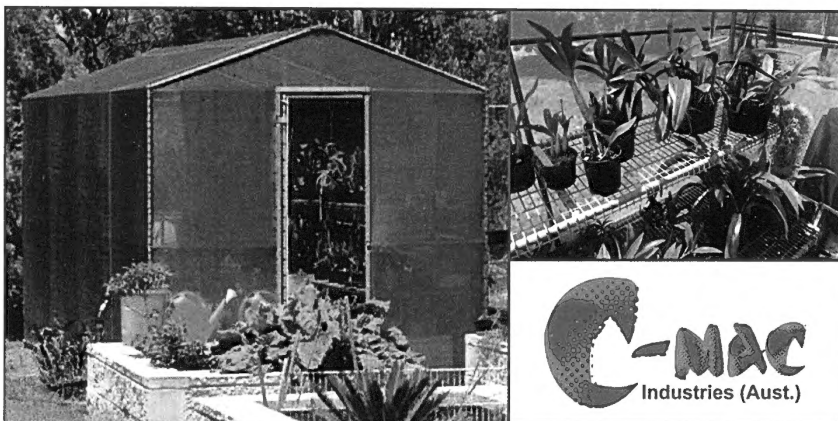
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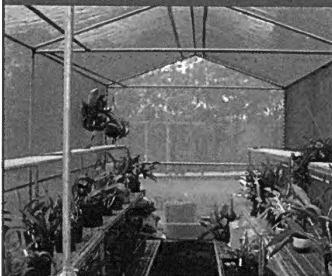
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